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TWENTY-SEVENTH ANNUAL REPORT

Illinois
Farmers' Institute

A Handbook of Agriculture

Proceedings of the Twenty-seventh Annual Meeting Held in
Monmouth, Ill., February 22, 23 and 24, 1922, Together
with Reports of Institute Work for the Year
Ending June 30, 1922

H. E. YOUNG, Secretary, Springfield, Illinois
(Forty Thousand Copies Issued)

[Printed by authority of the State of Illinois.]

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LETTER OF TRANSMITTAL.

To His Excellency, Len Small, Governor of Illinois:

DEAR SIR: I have the honor to transmit herewith the Twenty-seventh Annual Report of the Illinois Farmers' Institute for the fiscal year ending June 30, 1922.

Most respectfully yours,

H. E. YOUNG, *Secretary.*

Springfield, Illinois, July, 1922.



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GOVERNOR OF ILLINOIS.

ILLINOIS FARMERS' INSTITUTE

1922-1923.

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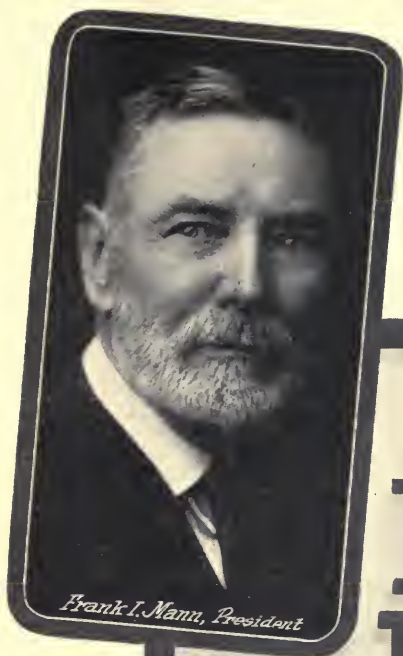
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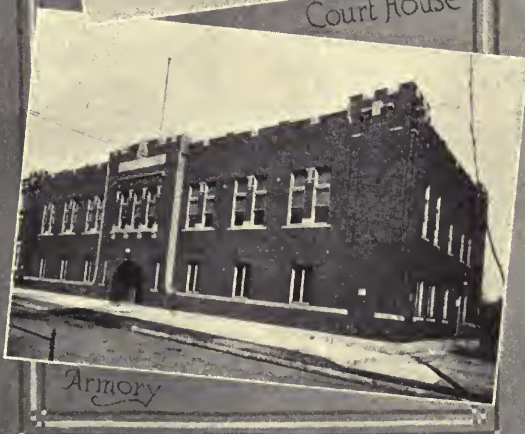
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Y.M.C.A.



Court House



Armory

MONMOUTH, WARREN COUNTY, ILLINOIS.

WHICH ENTERTAINED THE TWENTY-SEVENTH ANNUAL MEETING
OF THE ILLINOIS FARMERS' INSTITUTE, FEBRUARY
22, 23 and 24, 1922.

Monmouth is on the main line of the C. B. & Q., M. & St. L. and R. I. Southern Railroads.

Monmouth is the county seat of Warren County, noted for its extensive agricultural and live stock interests.

Monmouth has 20 miles of paved streets and hard roads leading in every direction.

Monmouth has a public school system unsurpassed by any city of its size in America.

Monmouth has live churches of every denomination.

Monmouth College was founded in 1856, and is a prominent co-educational institution.

Monmouth has a new, modern Armory, erected at a cost of \$150,000.

Monmouth has one of the first and best flying fields in the State, under the management of the Curtis Aircraft Corporation, which will, by early summer, maintain regular flying schedules to Chicago and other points.

Monmouth's magnificent Y. M. C. A., building is one of the best in the State, elaborately equipped with spacious lobby, bowling alleys, swimming pool, shower baths and gymnasium, all of which are open to delegates and visitors attending the State Institute.

Monmouth has two large stoneware companies, manufacturing and shipping all kinds of earthen ware to all parts of the world.

Monmouth Plow Factory, owned by 5,000 farmers living in all parts of the country, manufactures all types of plows, harrows, cultivators and corn planters, sold entirely by mail.

Monmouth is the home of the Pattee Plow Company, organized in 1872, manufacturing a complete line of corn cultivators, and employing 250 men.

Monmouth has a large clay manufacturing plant; a boiler pipe factory, a stump puller manufacturing plant; and a large mitten factory.

Monmouth is the headquarters of the Military Tract Live Stock Shippers' Association.

Monmouth is the headquarters of the Warren County Farm Bureau with an active membership of over 1,200 members.

Monmouth has a live Chamber of Commerce, with commodious quarters including reading rooms, club and pool rooms, ladies' rest rooms, restaurant, etc. All delegates and visitors will be made welcome. A Bureau of Information will be maintained here during the Institute.

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PROCEEDINGS OF THE TWENTY-SEVENTH ANNUAL STATE INSTITUTE MEETING.

Monmouth, Illinois, Wednesday, Thursday and Friday, February
22, 23 and 24, 1922.

WEDNESDAY MORNING SESSION.

February 22, 9 o'Clock A. M.

FRANK I. MANN, *President Illinois Farmers' Institute*, Presiding.

Male Quartette.....Monmouth College

Invocation.....Rev. J. R. McCrory

PRESIDENT MANN: We will now have a greeting from the Mayor
of the city, Mr. Chester Smith.

ADDRESS OF WELCOME.

(Chester Smith)

I am always a little bit unhappy when they introduce me. I am always afraid some day somebody will get up and tell the truth and say "We will now have a few commonplace remarks from Monmouth. Let me introduce the Mayor."

I have no business up here particularly. When I go to speak I am apt to lose my head a little. I am a good deal like that German they tell about in the late war. One of the colored regiments were ready to go over the top. One of the boys lost his place in the line. The order came to go over the top. This fellow did not have his gun, his bayonet, his trench knife or anything else, but he had to go over. He went over the top and came face to face with a big German. There was just one thing he could do—reach for his razor and swing at him. The German says, "Missed me." The colored man looked at him and said, "Just wait until you shake your head and see whether I missed you or not." That is the way with me. I lose my head at a time like this.

I take it I am here in my official capacity as mayor of Monmouth to tell you gentlemen how glad we are to have you as our guests in our town for this very important conference. When we went after this convention a year ago we realized the importance of this institute, the advertising it would give a town, the benefit it would give a community to have a representative bunch of men such as you gentlemen are come to our town, and we were all mighty glad when you decided to come.

I suppose that I should tell you a little about our town. I am hoping that you will find out in a better way, and that is by circulating around and meeting our business people. We have a typical mid-western county seat town of about nine thousand people, mostly retired farmers. Mon-

mouth is a friendly town. Monmouth is a country town. We are smart enough to know that we draw our sustenance from the country. We do not believe that we are doing the farmers a favor when we let them drive their cattle in here and spend money with us. We know they are doing us a favor. We try to do business along those lines. We are trying to make Monmouth a town that is popular with our rural population. You may call that selfish-minded, or whatever you wish.

That is another reason we are glad you gentlemen are here, because we want Monmouth to be a good agricultural community. We know that the old days have passed in farming. I lived in Oklahoma for a while and I saw something that probably a good many of you gentlemen have never seen. I saw as many as five men working on a load of corn. If they worked all day they would probably not get more than sixty or seventy bushels. Nowadays one muscular Swedish gentleman can get up early in the morning and get that much done in time to finish the pool tournament in the afternoon. I know it is a changing age. You men typify to us the vanguard, or the leaders in this changing age in agriculture. There is more education; there is more thought. There is more up-to-dateness found on the farm than in any other walk of life. We know that to be true. The man who works in a bank, the man who works in the shop develops a one-track mind,—if you will pardon that old expression. A farmer has to be resourceful; he has to battle elements. You gentlemen are the type of farmers who are leading this advance movement in farming. I am only sorry that the grain market is closed up today. I would like to tell you how much wheat is up this morning, but since this is a holiday I can not tell you.

I want to tell you something else that may be of interest to many of you. I am a country grain dealer. I run one of these little elevators that you see standing along the track every few miles. We have been in business nine years. The nine years we have been in business we have never entered into a contract with a man to buy or deliver his grain. There never has yet been a scrap of paper in our office that in any way looked like contract that has been broken. In nine years' time we have had exactly one farmer to go back on his contract. The reason I tell you this is that I want you to know that we have some regular farmers up in our community. You know how it is in different communities. That is the kind of farmers we have in our community.

But, gentlemen, I am not going to make a speech. I simply want you to realize that Monmouth is your town. We are glad that you are here. We hope your institute is a big success, and we will meet you in Belleville or Paris next year. [Applause.]

PRESIDENT MANN: I think we will all appreciate being in Monmouth a few days, and we will concede that this is quite a city. Some of us have come from small towns, those towns where they quit ringing the curfew many years ago because it woke up so many people. We believe Monmouth has gotten beyond that. I am sure we will appreciate our stay here.

I want to appoint some committees this morning. The Committee on Resolutions: Mr. A. N. Abbott of Morrison, Frank S. Haynes of Geneseo. George A. Switzer of Macomb, E. L. Wilson of Manhattan and C. V. Gregory of Chicago.

It has been the custom heretofore to refer all resolutions to the Committee on Resolutions without being presented to the house and if there is no objection that will be the procedure this year.

The Committee on Credentials: Mr. O. W. Hoit of Geneseo, E. Wright Allen of Decatur, and Chas. Arnold of Franklin Grove.

That committee will be holding in the Y. M. C. A. building next door, and those of you who are delegates file your credentials there and become registered before the regular convention later.

There is nothing nearer to the heart of the Institute than systems of permanent fertility. We want you also to understand that permanent systems of fertility may be profitable systems and hence we are asking a

few men to present to you their experiences in conducting permanent systems on their farms, to show you not only the profit but the permanency. We will first hear from Mr. Ray Gardner of Monmouth. [Applause.]

MORE DOLLARS PER ACRE.

(Ray Gardner.)

MR. CHAIRMAN, AND GENTLEMEN: We have found that limestone is an important factor in permanent fertility, and in our community we have used quite a little limestone and phosphate, possibly more than in many communities. In any community one of the greatest troubles about using limestone or phosphate is getting it in carload lots and having to haul it from the car to save paying demurrage. We have formed a company in our community and have built a warehouse, a large warehouse that will hold two or three carloads of phosphate and the same amount of limestone and anyone can go and get it any time they want to.

Limestone, should be used pretty heavy, sometimes as heavy as four tons to the acre. My experience has been in using from one to two tons to the acre. I know one ton to the acre makes a lot of difference in crops. It grows a lot more clover. I had one tract of forty acres which was divided into two fields, one of twenty-five acres and one of fifteen acres. It had been some years since the twenty-five acres had ever been seeded and I had been unable to get it to take clover. It would start, but the seasons were so dry there wasn't enough nutriment in the soil to hold the plants. I applied a ton of limestone on this twenty-five acres. The fifteen acres had been seeded as much as three different times in its regular rotation. On the twenty-five acres the red clover was much better than it was on the fifteen, and there was an excellent stand of sweet clover in it from a mixture of about a pound to a pound and a half to the acre. That soil was sweetened in that time by one ton of limestone so that the next year sweet clover managed to take the field all right.

On another field of twenty acres I sowed oats with a mixture of about a pound and a half of sweet clover. Now some may wonder why a person would sow sweet clover, but I think a man's ambition on the farm should be to some day reach the time when alfalfa may be seeded in the rotation. That time may seem a long ways off, but it don't seem as far to me now. This inoculation from seeding sweet clover scatters from one plant to another and covers quite an area, and that is the reason I do it that way.



Mr. Gardner's Sweet Clover.

(At rear of car one ton of limestone was applied—at front no application.)

On this twenty acres I noticed about four-fifths of the field was very well seeded to sweet clover and on the other fifth you could find hardly a plant. Then I remembered that I had run out of limestone and that was why there wasn't any sweet clover over in the other strip.

The spreading of limestone should be done as it is hauled from the car. If it is allowed to remain and rains come on it it is hard to spread and you must have a regular fertilizer spreader. There are nine farmers having a co-operative interest in the spreader we have, but we found that it would not handle wet limestone. It will not handle limestone that has laid out all winter, but an end-gate spreader will handle it when it is even so wet that you can make a ball out of it.

Now in regard to phosphate: It is a little harder to see any vast improvement by using phosphate rather than limestone, and, of course, it costs quite a little bit more. Nevertheless, I think we all ought to have more faith in experiments by men who have used it, like our Honorable President. My own experience with phosphate has shown some results. When it comes to clover hay, it makes on an average of at least 50 percent more hay, and the oats yield more heavily, are of much better quality, and the corn is of excellent quality. In the regular rotation of corn, clover, oats and clover I think it should be applied in the fall on the oats stubble. Then the growth of the clover feeds that into the soil and you get much better results. I put mine on the meadow and the results are not quite as quick, but it is there and ready to give results later.

Another thing that phosphate will do to quite an extent,—it has quite a lot of sweetening qualities. I found on the forty acres where I sowed this mixture, there is quite a bit of alfalfa and sweet clover all through the field and it seems to be inoculated and in fine shape. This sweet clover and alfalfa as it is mixed with the other seed is inoculated. I think a very good mixture for seeding is four pounds of common clover, two pounds of alsike, three of timothy and one of alfalfa. The reason that I don't include sweet clover is if your soil is sweet you are going to get a little too much sweet clover from the mixture. I had two experiences from sweet clover in mixtures and they were not just what I would like to have, not as a pasture or as a meadow. My experience was if you turn the stock out they will eat more of the other clover and neglect the sweet clover and it soon gets coarse it grows so rapidly. I think it would be better to sow sweet clover by itself, either for pasture or for hay, as it comes so much faster. I have had some sweet clover down in the low places that was at least eight or nine feet high. We disked that up and plowed it under, making a great amount of fertilizer.

Many farmers do not have alfalfa, but I know if they once had alfalfa, they would not do without it. A farmer may sow sixty acres of clover for forage. If he would sow twenty acres with alfalfa and have the soil limed he would have as much feed, and have the forty acres to do something else with. Then he could sow sweet clover, get the soil limed and sow it in sweet clover and produce three times as much fertilizer. By disking the whole crop up and plowing it under, root system and tops, you would increase the fertility three times as much as plowing under by clover after it had been cut off. Besides it could be used for pasture, and it makes a wonderful pasture.

Crop rotation is a wonderful thing. I have in mind a small farm. The lady said she seemed to know a little more about the farm than the man. She said that they did not have enough grass, that they could not sow clover, they needed it all for corn. Well, you can imagine a little about what the condition of that farm was. It was sold. Another man took charge of this place and when he moved on it he seeded quite a bit. He had hard work sometimes in getting clover to start, but he went to his neighbor and rented some ground from him, and on that ground he produced just as much hay and grain for his one-half as he was getting from his own. He says his crops have been increased 50 percent by rotation. This farm is one-quarter oats, one-quarter clover and half corn, and I understand that he is figuring on using some limestone and phosphate.

Above all things we ought to consider more alfalfa and sweet clover, and use more limestone and phosphate.

I thank you.

PRESIDENT MANN: One of the old war horses in the work on permanent fertility in this state has been Mr. William Webb, of Will county, and we will hear from him now. [Applause.]

PROFITABLE SOIL TREATMENT.

(*Wm. Webb.*)

MR. CHAIRMAN, BROTHER FARMERS AND FRIENDS: I have been asked to talk on profitable soil treatment. I am glad to hear the other speaker emphasize alfalfa, because I think alfalfa is one of the greatest crops we can grow.

I am going to tell you a little about some work that has been done on our experiment field and also on our home farm, giving you the way our land has been farmed and the results we are getting. Then you can judge for yourselves whether it has the proper soil treatment or not.

We started to use rock phosphate in 1908. At that time we used to put it on in strips, to find out whether it would pay for itself or not, or give results enough to pay. Then we started putting it on in parts of fields. We soon found that rock phosphate properly applied to fields that had been rotated the right way with leguminous crops enough to build up the nitrogen content, with the clover roots going down in the subsoil and putting plenty of humus in the soil, draining and aerating the soil in such a way that the corn roots can go down in the subsoil and get part of the plant food and not take it all from the surface soil,—would pay for itself several times over.

In 1914 the University of Illinois started an experiment field on our farm and I have had charge of the work on that field ever since. I have seen results enough from the soil treatment to convince me that we can build up the soil fertility and raise a large crop at the same time.

In 1915 the full treatment was put on this field, using the five-year rotation, corn, oats, clover, wheat and soybeans. In addition to that we had one series of alfalfa that would lay for five years, then that would be plowed up and turned over into one of the other series.

CROP SYSTEMS AND RESULTS.

We were practicing two systems of farming, livestock and grain farming. Plots numbers 1, 5 and 10 were non-treated plots, or check plots. Plot number 2 which is in the livestock system is treated with barnyard fertilizer. Plot number 3, barnyard fertilizer and limestone. Plot number 4, barnyard fertilizer, limestone and rock phosphate. Then plot number 5, as I said, was a check plot. Then we go to plot number 6, which is in the grain system. In the grain farm system we have no manure, we have to substitute something in place of manures, so we substitute catch crops and crop residue, sowing sweet clover in our winter wheat early in the spring, and then leaving that until the next spring, then plowing it under for a green manure with crop residue. Plot 7, catch crop, crop residue and lime. Plot 8, catch crop, crop residue, lime and rock phosphate. Plot 9, catch crop, crop residue, lime, phosphorus and potassium. The potassium does not pay for itself, except on the sweet clover; it makes quite an additional growth in the sweet clover. Since we have been using the sweet clover I think we are getting something out of the potassium, on account of the extra growth in sweet clovers plowed under.

This system has been carried on for six years. They are changing the system now. I am going to give you some of the results obtained in the average yield in that six-year rotation. As I told you, it was corn, oats, clover, wheat and soybeans.

Now the average yield on the grain farming system has been quite a little better than in the stock farming system. These are field weights in round numbers which I will give you. The average gain per acre on the treated plots over the non-treated plots for the six years in corn was 20 bushels; the average gain for the six years in wheat was 18 bushels; the average gain for six years in oats was 15 bushels; the average gain for six years in alfalfa was a ton and half per acre. The gain for clover and soybean hay is about one ton per acre.

WHAT THIS MEANS ON 160 ACRES.

Now I am going to take a field of 160 acres and farm it in this way, using this same rotation. I am going to apply 4,000 pounds of limestone per acre on the whole 160 acres, and that will cost us at the present prices, spread over our land, \$800 for the 160 acres—of course it makes some difference where you are located as to the cost for treatment. Then I will apply 2,000 pounds of rock phosphate per acre to the entire 160 acres, and that will cost us at the present price \$1910. This makes a total cost of \$2710 for treatment. Now I am going to figure that that will last for ten years, —and it will last longer. Figuring corn at fifty cents a bushel, wheat at a dollar per bushel, oats at thirty-five cents a bushel, clover and soybean hay at fifteen dollars a ton, alfalfa hay at twenty dollars a ton, pasture gain from treatment two dollars and a half an acre, we get a total gain from the treatment on 160 acres for one year of \$1,896; for ten years we will get \$18,960. Subtracting the cost of the treatment for the ten years, which was \$2710, we have a balance of \$16,250 in gain for our treatment in the ten years.

Now, if we go on and put the same treatment on at the same cost and carry it on for another ten years, figuring grain at the same price, we will then have for the twenty years \$32,500 gain for treatment over and above cost of treatment. In other words, we would pay the principal on 160 acres of land in twenty years of \$203 per acre, or in twenty-five years we would pay the principal of \$254 per acre. If we figure the cost of material for soil treatment at what it was about seven years ago that would reduce it nearly one-third, or from sixteen years to twenty-two years to pay for a farm at those prices.

RESULTS ON HOME FARM.

Now about the results from soil treatment on our own farm, telling how the farm has been farmed from year to year. We had in 1915 one field of pasture in mixed clover, consisting of mammoth clover, red clover, alsike, alfalfa and a little timothy. We used a little timothy in the field to hold up the alsike. Alsike grows close to the ground, but when held up by the timothy, it makes a much better pasture. In the fall we plowed this field from six to six and a half inches deep. In the spring of 1916, and fall of 1917, we applied 2,000 pounds of rock phosphate per acre to this field and also to our entire farm. We put a great deal of work on the field to get the right kind of seed-bed. We disked it deep and rolled it several times with a corrugated roller to get a good compact seed-bed. If you have a tin Lizzie and can run over it on high you will then have a good seed-bed. We then seeded 10 pounds of scarified alfalfa seed per acre with a bushel of barley as a nurse crop, seeded with a drill, then rolled with a corrugated roller both ways. We had intended to cut the barley for hay. After the barley was headed I went into it to see if it was ready to cut for hay, and found the alfalfa was from twelve to eighteen inches high,—a good stand, good dark green color. Barley was a good price that year. The barley seemed to be filling fine, the heads were large and they hung over, so it looked to me as though they were filling well. I might illustrate that by telling a story:

There was a darkey walking along stooped over, head hanging down. He met his young master. His master said to him, "Sambo, why don't you straignhten up and hold up your head?" The darkey said "Massa, see

dat barley field over there," "Yes, Sambo." "Well, see dem heads what hang over?" "Yes, Sambo." "Well, dem am de heads what got something in them, de heads dat stand up straight aint got nothin' in dem."

The heads were very well filled, because they threshed out seventy bushels to the acre.

In 1918 the alfalfa came out in good shape,—cut 6 tons per acre. In 1919, the alfalfa cut the first cutting 6,200 pounds per acre. At time of second cutting it was rather dry, but it cut 3,100 pounds per acre. We then turned the hogs into it and did not cut it again, only just to clip it. In 1920 we plowed the field up and it yiealded us 86 bushels of corn per acre. In 1921 this field made 32 bushels of wheat per acre.

In 1916 we had one other field that was a mixed pasture, the same as I have described. This field was plowed in the fall of 1916, six and a half inches deep. In 1917 this field was in corn. It was one of the best looking fields of corn that I had ever seen. I expected a good deal from this field, but on the night of September 9th we had a killing frost which hurt the field pretty much, but not nearly as much as the adjoining fields that had not been treated with rock phosphate. We turned cattle and hogs into the field. The field made us \$62.50 an acre over and above what our brood sows got out of it cleaning up the field. In the spring of 1918 we put one-half of this field into spring wheat, the other half in barley, seeding two bushels of wheat yer acre, one bushel of barley per acre. The wheat threshed out 55 bushels per acre and the barley threshed out a little over 75 bushels per acre.

We turned seventy-five head of hogs into this field and they ran in the field four weeks, cleaned up the wheat and barley and pasturing on the rape which we had seeded in for hog feed. In 1919 this field was in corn and made 85 bushels per acre. In 1920 half of the field was seeded to mammoth clover and half of the field seeded to alfalfa. In 1920 we cut the clover for seed and spread the straw back on our land, the alfalfa cut three cuttings better than 3,000 pounds per acre, and we could have cut it a fourth time, but we turned the hogs into it instead.

Q. One question sir. You spoke of plowing up the mammoth clover; did you thresh it?

Mr. WEBB: We threshed it and then put the straw on the ground.

In 1919 we had a small field of Turkey Red winter wheat that made 55 bushels to the acre.

Q. How much rock phosphate did you say you applied?

Mr. WEBB: Two thousand pounds of rock phosphate per acre had been applied in 1916.

In 1920 corn made 82 bushels per acre; 1921 winter wheat 45 bushels per acre. In the fall of 1919 we seeded a thirty acre field with Turkey Red winter wheat. Half of this field was a mixed clover. We plowed the clover sod and drilled in the wheat and it yielded 50 bushels per acre.

The other half of the field was corn. The corn field had been a mixed clover the year before. The yield from the corn field was 44 bushels per acre. In 1921 the field was in corn and made 80 bushels per acre. In the spring of 1920 it was pretty wet and we had a pond of water standing on the wheat, on the same wheat that I have been telling you about. That covered probably five acres. That water had been standing there for quite a while. I began to think the water would drown out the wheat. The ground had been frozen and the water could not get through to the tile. On the morning of the 28th of March I told my wife if the water did not go off pretty soon the wheat would be lost, but that day at noon a tornado came along which took the water all out of that pond and saved us five acres of good wheat.

Don't understand me to say that I recommend that kind of drainage. I do not. While it was taking the water out of that pond it took one set of our buildings along also.

In conclusion, let me say that we should take the best care of our seeds that we are to use for planting; see to it that they are free from disease, corn free from root rot, then plant on soil that has been rotated

in the right way. The plants will then grow better, stronger and will be better able to resist insects and disease.

When we feed our stock we know they grow faster on a balanced ration. Our most dangerous criminals are our educated criminals. Why? Because their education is not balanced. Many of them are lacking in physical education, many more in mental education. When we take the right kind of care of our boys and girls and give them a balanced education physically, mentally and morally, they will grow up to be noble men and women and then they will be able to straighten out the troubles in this old world of ours in other ways than by wars and bloodshed.

I thank you.

PRESIDENT MANN: I think there is no one in the state who has been doing work in permanent agriculture more consistently and has kept more thorough data on what is done than Mr. J. C. Meis of Livingston County, and he will talk to us now. [Applause.]

PERMANENT AGRICULTURE.

(J. C. Meis.)

MR. CHAIRMAN, AND FARMER FRIENDS OF ILLINOIS: I am not going to enter into the whys and wherefores of this soil treatment, because it is conceded that it is the thing to do. As the topic calls for us to give our profit I thought it probably was the most profitable thing for you if I would give the profits that I have received from this work.



J. C. Meis

I don't know whether there are any of you men here who have the same trouble that I have in my neighborhood. I am called a crank on phosphate. Usually when a man departs from a certain custom and gets out of the rut he is called a crank. Beginning the use of raw rock phosphate is really the hardest part of the proposition,—the ordering of that first carload,—therefore I am going to tell how I got started.

GETTING STARTED WITH PHOSPHATE.

I moved on my present farm the spring of 1906, moving back to Livingston County from Iowa where I had lived four years. During the summer of 1906 I discovered from the crops I raised and from the talk of my neighbors that I did not have a very productive farm. During the summer I had several talks with a lumber dealer in Fairbury who was born and grew to manhood on a farm in New York. He showed me several bulletins from the University of Illinois, showing the increase in crops from the use of raw rock phosphate.

and he also told what had happened to their land in New York where they had grown good crops of grain and clovers and that their clovers began to fail. They could not get a stand, and later their grain crops were not large enough to be profitable. He had visited the old neighborhood after being gone for many years and found the old home farm could be bought for \$50 an acre, whereas it could have been sold for \$200 an acre when he was a young man.

He finally ordered a small carload and intended to sell it at cost. He had a hard time to dispose of it. He had expected to get his profit later by doing a larger lumber business when he had gotten all the farmers around Fairbury to use phosphate and thereby raising larger crops. I bought two tons of this carload and applied it with an old end-gate grain seeder on one side of an oats stubble field, during the fall of 1906. I had

failed to get a stand of clover in this field. I applied it at the rate of 1,000 pounds per acre.

I watched this piece like a small boy watches his prize colt, calf or pig, but was disappointed in the corn of 1907, the oats of 1908 and the wheat of 1909, as I could see no results. I rather began to go back on my New York friend, but first determined to find out if I had used it correctly. During the winter of 1908 and 1909 I went to a farmers' institute and heard Dr. Hopkins talk on raw rock phosphate. I now know why I had no results.

In the spring of 1909 I got nine tons and put it on twenty acres that had been in clover in 1908. I said "clover", but honestly it was just a pretense at clover. This twenty acres was immediately plowed and planted to corn and yielded five bushels more per acre than the other fields. This hardly satisfied me as I did not yet know what caused the increase,—the clover or the phosphate.

It was in 1910 that I really knew I had gotten results. The four acres where I had applied the first two tons was in clover with the balance of the field. The difference between the field that had phosphate and that which had no phosphate was as noticeable as a dead furrow, there being more than twice as much clover on the phosphated ground.

The twenty acres that had been phosphated in 1909 was put in oats in 1910. This gave an increase of 15 bushels per acre more than my other fields.

Then I was sure that raw rock phosphate had given results, but as some farmers began to ask questions and others to scoff and I could not explain the real reason I managed to get Dr. Hopkins to speak at a farmers' institute in Fairbury. One statement that Dr. Hopkins made was very encouraging to me. It was to the effect that a farmer having 160 acres and not being able to borrow the money could sell 40 acres to get the money and apply the Illinois System of Permanent Fertility to the remaining 120 acres and make more money than if the 160 acres were farmed. The following spring of 1911 I borrowed money to buy my first carload, 32 tons, of raw rock phosphate.

In 1912 I was in DeKalb County and called upon William Eckhardt the first morning he opened the Farm Bureau office. After some talk with him and stating that I would like to see a County Advisor in Livingston County so as to know more about the types of soil, he suggested that I get some soil man from the University of Illinois to go over my farm and make a soil map. I secured Mr. Gustafson to do this for me in September, 1912. From him I learned that I had a type of soil termed a sandy phase of brown silt loam, very low in organic matter, quite acid and deficient in phosphorus.

I have given this in detail to show how slow I was in getting started. I know now that I could have gotten my information sooner, but there is certainly no excuse for being so slow now, with all the information from the University and with the county advisors in nearly every county.

I have three methods to show my results from the use of raw rock phosphate. In the following table I have a comparison of results on the farm during the years I was making the first application of raw rock phosphate:

CAMPARISON OF RESULTS ON FARM.

		Phosphate. bushels.	No Phosphate. bushels.	Increase. bushels.
1910	Oats	45	30	15
	Clover	More than doubled.		
1911	Corn	40	35	5
1912	Corn	71½	53½	18
	Oats	78	53	25
1913	Corn	48	42	6
	Clover	More than doubled.		
1914	Oats	47	38	9
	Clover	More than doubled.		
1917	Corn	63	45	18

I have already told of the increase in 1910 of the nine tons put on in 1909 on twenty acres,—15 bushels per acre increase of oats; and of clover from the first two tons put on in 1906, clover more than doubled in 1910.

In 1911 the field that was in phosphated oats in 1910 gave an increased yield of 5 bushels of corn per acre.

In 1912 thirty-six acres of phosphated corn yielded 71½ bushels per acre and the balance of corn on the farm 53½ bushels per acre, giving an increase of 18 bushels.

Oats on ten acres of phosphated ground yielded 78 bushels, balance of oats 53 bushels, an increase of 25 bushels per acre.

In 1913 the same thirty-six acres was put back into corn and gave an increase of 6 bushels of corn per acre above balance of corn on the farm.

In 1913, I had sixty acres of clover, twenty acres of which was phosphated with the nine tons in 1909, and forty acres of clover in the same field. County Advisor Bishop held a demonstration in this field June 17, 1913. Seventy automobiles were lined up and over three hundred people were present. Everyone was of the opinion that the clover was more than doubled.

In 1914 oats on the thirty-six acres gave an increase of 9 bushels per acre more than the balance of the farm.

Clover more than doubled on a sixty acre field and was said to be the finest large field of clover in the county. I failed to get a stand of clover on this field in 1907, 1909 and 1911, and I also would have failed in 1913 if the oats had not been exceptionally thin. Rock phosphate was applied during the fall of 1913, and as stated, clover was doubled in 1914. In the fall of 1914 I had gone over the balance of the farm and now the entire 320 acres had been covered with one ton per acre of rock phosphate and an extra forty tons had been put on the little knolls and ridges.

Late in the fall of 1916 I bought an adjoining eighty acre farm and in 1917 it was all put into corn, yielding 45 bushels per acre and the corn on the home farm, ninety-two acres, made 63 bushels per acre,—18 bushels per acre increase in favor of the phosphate.

The following tables give a comparison for a period of years:

YIELD WITHOUT ROCK PHOSPHATE FOR SIX YEARS.

		Acres.	Bushels.	Average bushels per acre.
1906	Corn	150	6,350	42
1907	Corn	120	4,650	39
1908	Corn	84	2,740	32
1909	Corn	134	5,410	40
1910	Corn	114	4,560	40
1911	Corn	114	4,140	36
Total		716	27,850	Net 39
1906	Oats	134	4,425	33
1907	Oats	105	2,715	26
1908	Oats	60	1,500	25
1909	Oats	84	3,360	40
1910	Oats	84	2,520	30
1911	Oats	64	2,240	35
Total		531	16,760	Net 31
1907	Wheat	40	1,080	27
1908	Wheat	80	1,680	21
1909	Wheat	36	612	17
1910	Wheat	43	1,075	25
1911	Wheat	40	760	19
Total		239	5,207	Net 21

YIELD WITH ROCK PHOSPHATE FOR SEVEN YEARS.

		Acres.	Bushels.	Average bushels per acre.	
1915	Corn	122	6,710	55	
1916	Corn	122	6,100	50	
1917	Corn	92	5,780	63	
1918	Corn	165	9,075	55	
1919	Corn	110	6,050	55	
1920	Corn	180	8,100	45	
Total		791	41,815	Net 52	
1921	Corn	118	4,720	40	51
1915	Oats	25	1,900	76	
1916	Oats	57	3,041	53	
1917	Oats	100	6,300	63	
1918	Oats	80	3,600	45	
1919	Oats	80	3,200	40	
1920	Oats	70	3,010	43	
Total		412	21,051	Net 51	
1921	Oats	130	6,500	50	50.8
1915	Wheat	136	4,692	34	
1916	Wheat	64	1,536	24	
1917	Wheat	60	1,590	26	
1918	Wheat	70	2,660	38	
1919	Wheat	155	3,255	21	
1920	Wheat	80	1,760	22	
Total		565	15,493	Net 27	
1921	Wheat	54	2,172	40	28

In these tables are given the yields without phosphorus for six years, 1906-11, inclusive, for corn and oats and five years for wheat. And then the yields with phosphorus for seven years, 1915-1921, inclusive, having tabulated the first six years together and then adding the seventh, in order to make comparison with the first six-year period.

If my average for corn in the first six years would have been 52 bushels, as it was in the second six years, I could have grown the 27,852 bushels on 536 acres instead of 716 acres, or 180 acres less, and therefore 30 acres less corn for each year.

If the average for oats had been 51 bushels for the first six years instead of 31 bushels it would have taken only 329 acres to have grown the 16,760 bushels, or 202 acres less, and therefore 33 acres less oats for each year.

Taking 27 bushels of wheat, the average of the second six years, instead of 21 bushels, the average of the first five years, the 5,207 bushels could have been grown on 192 acres instead of 239 acres, or 47 acres less, making an average of over 9 acres less for each of the five years. This gives a total of 72 acres less grain for each year, or approximately one-fourth of the 320 acres, which could have been in clover.

Why was the average so low in the first six years? This is easily explained. My soil was very low in organic matter, therefore low in nitrogen and available plant foods. During this time I could hardly get a stand of clover.

In 1916 a chemical analysis was made of the soil on an adjoining farm, same type of soil and about the same system of farming in previous years. The analysis showed 3,000 pounds of nitrogen and 800 pounds of phosphorus in the plowed soil. No wonder my yields were so small. They are still small, but that is mostly my fault, because I did what nearly every farmer did during the high prices of grain,—cut out clover and put all the land into grain.

ACTUAL CASH VALUE RECORD.

In order to determine the actual cash value of the crop increase I have kept a record of the crop yields of the threshing run and then

figured the increase at the actual price I received for my own crops that year. The following table gives this record:

	Acres.	Increase per acre. bushels.	Price.	Value of Increase. bushels.
(1915)				
Corn	122	10	\$0.76	\$927.20
Oats	25	20	.50	250.00
Wheat	136	6	1.03	837.48
Total increase for year				\$2,014.68
(1916)				
Corn	122	5	\$0.90	\$549.00
Oats	57	10	.50	285.00
Wheat	64	14	1.20	1,075.20
Total increase for year				\$1,909.20
(1917)				
Corn	92	18	\$1.34	\$2,219.04
Oats	100	5	.68	340.00
Wheat	60	10	2.30	1,380.00
Total increase for year				\$3,939.04
(1918)				
Corn	165	10	\$1.25	\$2,062.50
Oats	80	7	.66	369.60
Wheat	70	10	2.10	1,470.00
Total increase for year				\$3,902.10
(1919)				
Corn	110	10	\$1.20	\$1,320.00
Oats	80	3	.80	192.00
Wheat	155	3	2.11	981.15
Total increase for year				\$2,493.15
(1920)				
Corn	180	15	\$0.55	\$1 485.00
Oats	70	5	.40	140.00
Wheat	80	5	2.50	1,000.00
Total increase for year				2,625.00
(1921)				
Corn	180
Oats	130	15	\$0.30	\$585.00
Wheat	54	12	1.11	719.28
Total increase for year				\$1,304.28
Total increase for 1915-1921				18,187.45
Increase before 1915				1,316.00
Total increase				\$19,503.45
Cost of 1,252 tons phosphate				\$10,580.00

This leaves a nice profit, but the most important fact is that most of the phosphate is still in the ground waiting for the clovers to come along and release it.

If the entire volume of grain produced since 1915 is taken it will be found that only about 60 tons of the 1252 tons of raw rock phosphate has been used.

Q. Mr. Meis, in figuring the cost are you figuring labor?

Mr. MEIS: My labor on that has not been very big, because I have been able to get that mostly in the fall of the year and I have not had very far to haul, from two to four miles. I haven't figured any labor, just the actual cost of the phosphate.

Q. Have you applied that on 400 acres?

Mr. MEIS: That is on 400 acres. I had 320 to start with.

Q. Mr. Meis, you have got about \$9,000 profit there. How much phosphorus have you got in your soil? You put on three tons. You have got phosphorus to run you for a good while, haven't you?

Mr. MEIS: A good many years. I have not really taken this up with anybody. Mr. Mann can probably tell you more about it. I figure that this

amount of corn, this amount of oats, this amount of wheat which has been taken off of the land has used up 60 tons of the raw rock phosphate and that I have about 1192 tons left. Is that right, Mr. Mann?

PRESIDENT MANN: Approximately, yes, sir.

Mr. MEIS: So I have got a large bank account to start on. I will put it this way, gentlemen, that our farm is nothing more nor less than a bank. We have got a certain amount of fertility. If we take out a little more every year and don't put it back, land ruin stares us in the face. There is no way to get around it. If I can put on the mineral elements at this cost and only use 60 tons and get \$9,000 profit out of it, I have got a good many years left. I don't expect to get it out myself. I expect my children to get a lot of this out after I am gone.

SATISFACTION AS WELL AS PROFIT.

Now just another word. This is from the standpoint of dollars and cents. It means more than that to me. It means a lot of satisfaction. I begin to feel like I am a farmer and not a miner. Heretofore I was a miner of the soil. I was robbing my bank account, taking everything out and putting nothing back. I begin to feel that this old farm of mine is a whole lot better now than when I got hold of it, and I am going to be able to leave my five boys and one girl a whole lot better farm than when I got it.

How could I make farming more profitable? It is a profit from the dollars and cents standpoint and it is a profit from the satisfaction I got out of it. I feel I am doing something for my fellow men, doing something for my children, and it is profitable while I am doing it.

Mr. THOMPSON: Mr. Meis, what interest have your children shown in your program of fertility?

Mr. MEIS: The oldest boy is eighteen, the next one is sixteen, the next one is fourteen, and they seem to be quite interested. Years ago when they were a little smaller, when they began to see the nodules on the clover, we began to talk about it, to plan to get a carload of phosphate, how to put it on and they began to show an interest.

Q. Is this a continual operation? I understand you use a large amount; do you continue that?

Mr. MEIS: I don't know how soon I will put on more phosphate. This summer I am going to give limestone a thorough trial. I am going to put on as high as 4 tons to the acre, but I do expect in another year or two to put on some more phosphate. I had 800 pounds of phosphate per acre to start with, I have added 800 pounds per acre which only gives me 1600 pounds, and really before I stop I ought to get 2200 pounds on each acre. I have built up the phosphate content a little faster than the nitrogen content, so I am going to put in clover and legumes heavier this year before I put on more phosphate.

Q. What percentage of the corn that was raised on this farm was fed on this farm?

Mr. MEIS: I only keep work horses enough to handle the work, and a few cows to give us our cream and milk. The corn is practically all sold.

Q. Do you think a heavier application of phosphate is more profitable than a light application, such as a half a ton?

Mr. MEIS: I put on a ton to the acre. It depends on the nitrogen content of the soil. If you have a large content of nitrogen it would be more profitable to put on a ton to the acre. If your nitrogen content is low I would advise you to go over your farm with half a ton to the acre. It depends somewhat on your soil.

Now let me say this: There is no need of any of you to go into this as a guessing proposition. Go and see your county agent; go and see some soil man. You can get absolutely started right.

Q. Are you raising livestock?

Mr. MEIS: No livestock.

Q. Can you use limestone profitably without phosphate?

Mr. MEIS: That depends on conditions. In southern Illinois their first need is limestone, and in this locality there is perhaps need of limestone first. That is why I say go to your county agent. There is no need of guessing about it. For southern Illinois I would say absolutely limestone first. I have talked phosphate here. I have used phosphate because our conditions in Livingston county proves to us that phosphate is more paying right from the start.

Q. What about this section?

Mr. MEIS: I don't know about this section.

Q. Isn't an analysis of the soil a necessity in order to do the work intelligently?

Mr. MEIS: To a certain extent, yes. If you don't get an analysis get somebody who knows something about the soil. I have never had an analysis of mine, but I have seen an analysis of the farm next to mine.

Q. If you fed your crops on the farm what difference would it make?

Mr. MEIS: The organic matter would give me a large increase, because I am short of organic matter and nitrogen. Three thousand pounds of nitrogen is very low. I would have gotten more returns from my phosphate. I haven't liberated it as fast as I might have been able if I had more legumes and organic matter.

If there are no further questions, I thank you.

PRESIDENT MANN: There is about a minute of Mr. Meis' time left and I would like to say a word, if you will pardon the intrusion, on the question relative to the value of the accumulation of phosphorus. Last year the difference in yield of wheat, where phosphorus was the limiting factor, where the other things were maintained in sufficient quantity, there was a difference of thirty-three bushels of wheat. As near as I can figure it out about fourteen bushels came from the fourth ton of phosphorus which was applied, about ten bushels from the third ton which was applied, about six from the second ton which was applied and about three to four from the first ton applied sixteen years ago. That is the way it accumulates. With one ton applied you never get beyond the first fourteen bushels increase. The first ton, the second ton and the third ton still contributes to the increase in crop, which answers your question as to the value of the accumulation.

Now we will have some further word on this by Mr. F. A. Gougler, of Quincy. (Applause.)

PROFITABLE SOIL TREATMENT.

(F. A. Gougler.)

MR. CHAIRMAN, AND FARMERS' INSTITUTE FRIENDS: We have gained a lot of information about soils since our worthy investigator Dr. Hopkins went into this work not so many years ago. I got my first inspiration on this subject when I was not so old in reading some of those old bulletins way back yonder relating to the controversy between Dr. Hopkins and our Department of Agriculture at Washington. Before I even ever entered an agricultural college I read those discussions and they appealed to me as wonderful, and really determined my course. When I entered college I made up my mind that my subject would be soils, that that would be my hobby, and I believe it is a pretty good hobby.

Now what we gain is the knowledge that Dr. Hopkins and other investigators have worked out and handed down to us and such man as you heard this morning have put that into practice. But folks, we have got to look out. We have got to be careful that there is not someone who upsets this program. There are men who are watching every opportunity and scheming every way to bring that about. You only need to read some articles of men who are pretty shrewd which appear in some of our farm papers. They are misleading, they ought to be answered, and I am glad some men have

courage enough to answer them. I would be glad to answer them myself sometimes if I thought I had the ability and my answer would count.

I came from Missouri to Illinois and was acquainted with the work over there, and I find such a difference in the Missouri program compared with the Illinois program! When I was an adviser in Missouri there was hardly a week that passed but what some commercial fertilizer shark came around to me and tried to interest me in his dope. I don't know whether they got very far with the other farm advisors or not, but I know they did not with me.

We did not have the opportunity of putting over this program as we have here in Illinois, because even our own agricultural college in Missouri had never learned the lesson. I found it quite different when I came over to Illinois in that I wasn't annoyed by these so-called fertilizer agents.

This program of Dr. Hopkins as it is worked out, this simple formula of maintaining soil fertility—limestone, legumes and rock phosphate—is so simple that we are willing to go into it and study a little and put it into practice, as Mr. Meis has done, and there is no excuse nowadays for not putting these things into practice. We have a whole lot more information to-day than we had fifteen or twenty years ago, and we are getting more every day.

Someone in the audience asks the question: "Is it necessary to have your soil analyzed in order to apply these fertilizers intelligently?" That has been done pretty nearly all over the state. I don't know how many counties have had soil surveys made, but enough of them have so that if we will get hold of a soil survey book, if it hasn't been made in our own county and if we get it to the nearest one to our county we get a pretty good line on our soil. You know, I think that is worth a world to us in Illinois, that we have that information, and worked out in such detail that we know we can go out and look a man's farm over and tell him, "Your farm is made up of so many types, and this type of soil has so much phosphorus per acre, this soil has so much limestone," as the man told you. He told you exactly how many pounds of nitrogen in the first foot, how many pounds of phosphorus and how many pounds of each of those you ought to have in order to have a good, fertile soil. Isn't that worth a world to us? Our forefathers did not have that information. They did not need it. They did not need it as we need it, because the soils were fertile and they did not have to worry very much, but when our sons take hold of our farms, if we have not followed the program as Mr. Meis has followed it, they have got an up-hill job. With this vast information, the more we can know about it, the more faith we can have in it, the more interesting it is.

I can give you examples this morning of what Adams County farmers have done in the way of applying rock phosphate and limestone and the results accomplished, just as Mr. Meis has done, but I will tell you folks, there is a whole lot more about this that would be well if we knew. I believe that we ought to see the importance of teaching our young people these simple problems of soil chemistry. I want to illustrate what I mean.

SIMPLE CHEMICAL REACTION.

We talk about liming the soil because the soil is acid. We want to know how to determine that. There are several ways worked out how to determine the acidity in the soil. The old familiar method, the litmus paper method, we all understand the use of that and know what it means. We know then that if it shows to be acid by applying limestone to correct the acidity we grow more crops. I wonder how much more we would be interested in this subject if we knew the chemistry of it. I wonder if I could put it on the board. I use the illustration in my own county when I try to put over the limestone program. I usually perform a little demonstration. I usually have with me a bottle of acid, a piece of limestone, a piece of flint, or any other rock that is not limestone. If I take that limestone and pour acid on it you will see it boil up, give off fumes. There is a reaction there. Something happens.

Now then, what happens? Limestone is a chemical product, it is made up of elements. Now, elements are simple things. We do not always understand what elements are; we do not always understand what compounds are, but it would be worth a whole lot to farmers and farmers' boys if they did understand these things. They would be more interested in the work they are doing, because they can see what is going on. Just like we go on and plant corn, cultivate it and finally produce an ear of corn. A whole lot of things happen there that we did not think about. A great many chemical changes take place. If we had an understanding of them there would be a whole lot more interest in the work we are trying to do.

I want to illustrate that by this little simple reaction. I am going to put a piece of limestone here on the board in a different form probably than many of you have ever seen before. It is written by the chemist in this way: CaCO_3 . When I see that I can't think of anything else but limestone. Just the same as if I write the word "Limestone". When you see that you don't need to see the rock, do you? There it is. That word tells you that is limestone. This formula means the same to the chemist. That is limestone in its pure state. It is made up of three elements—calcium, carbon and oxygen.

Now what is an element? This thing as it stands we call a compound. Just briefly let us define an element. There are certain elements that exist as elements alone. Sulphur is an element. No matter where we get hold of a piece of sulphur it is sulphur and nothing else. Nothing else is combined with it. Carbon is an element represented by "C". A good example of carbon is charcoal. Now when I was a boy we used to take sulphur. I



Showing how the terraces are started by back-furrowing two rounds. Note the smooth curves.

—(Courtesy Missouri Experiment Station)

don't believe we practice those home remedies so much as we used to. I asked an audience some while back what we used sulphur for and somebody said, "We would use it if we had the itch." I don't know whether I had the itch. Mother made us take it. She did not know why, but she made us take it. It was supposed to do us good. How about charcoal? That is supposed to be pretty good for a sour stomach, isn't it?

Now look here at this interesting thing that happens. You can take those two elements, mix them together, take them internally and it doesn't hurt you, but you take the two simple elements, sulphur and carbon, mix them together in the right proportions and apply heat which will finally dissolve them and form a liquid and you will produce a product that is poisonous—carbon-bisulphite. A poison we use to put in our wheat bins to kill weevil. You see how simple chemistry really is.

Here is limestone. We are going to put that on a soil that is acid. Now, let's see. Limestone plus acid, we will take hydrochloric acid, 2HCL . It happens in chemistry that it takes two pounds of HCL to react with one pound of CaCO_3 , so we write "2" before the HCL . Chemical action is just like simple arithmetic, if we don't get too deep into chemistry.

I will write another equation. Two plus two plus four equals what? Any child will tell us it will equal eight,—or it will equal four plus four. Anybody can understand that. A chemical equation is just exactly the same thing. We bring these two things together. They unite. This calcium hooks on to that chlorine and forms CaCl_2 , plus this carbon, this oxygen, hooked up with that and forms H_2CO_3 , which is another acid; by bringing the three things together the limestone and acid unite and form a salt that is harmless to the soil, another acid that is a weak acid, that can't exist as such, and this acid breaks up into H_2O (water) plus CO_2 (carbondioxid). The water remains in the soil without harm, and the CO_2 passes into the air in the form of a gas. No matter what kind of acid is in the soil that reaction takes place and produces a salt that doesn't do our soil any harm. That salt is closely related to another salt that you use every day, NaCl .

Now I wonder if I have gotten into too deep water, but that is all there is to putting lime on your soil. What I am getting at, friends, is this: if you have a boy that is interested in farming, like Mr. Meis' boys, if he understood this simple thing wouldn't it mean more to him when he limes his soil, if he knows just what happens, than if all he would know is "I am putting lime on here just because Smith says so"?

That is as far as I am going into chemistry in these problems that we consider complex and it just depends on how deep we go. Mr. Mann can go into the problem of phosphorus and he can put equations on the board that none of us can translate because he has gone into the subject not only from the practical standpoint but from the chemist's standpoint. However, we don't all need to go into the subject that deeply. We do not all need to know it as the chemist knows it. I am giving you this more for your boys. If you have got a boy give him a little simple chemistry.

LAND TERRACING SAVES WASHING.

There is one more hobby that I want to present. I take it that this



View of terraces after a rain showing how they catch the soil and also how they check the flow of water down the slope and carry it around the hill.

—(Courtesy Missouri Experiment Station)

crowd represents a pretty good territory in Illinois. I came from Burlington over here this morning and I noticed I came over pretty level country. It occurred to me that maybe my talk won't fit in Warren County, but I take it that many of you are from other counties, and perhaps many of you do have more or less rough land, and if you have a simple little operation will save what you have.

If you have land that slopes, that is inclined to wash, there is a simple little operation that you can perform that won't cost much, that will beat your old method of going out after such rains as we have had lately and filling the gullies full of straw and hedge brush. Why didn't we think of that years ago? It is nothing in the world but terracing land that is inclined to wash. I did quite a bit of terracing in Missouri, in the county where I served four years as Farm Adviser, and this last fall did some of the first terracing that was done in Adams County. We have terraced probably half a dozen farms in Adams County, in different parts of the county.

Now what is terracing and where can we apply it? It can be used on any sloping land that we intend to farm, or have in grass, as far as that goes, but especially land rotated from crops to grass that is inclined to wash. I think I can illustrate it by putting a diagram on the board of a forty acre field, we will say, that is rather rough. There is a kind of ravine that comes through it like this (illustrating on board). That is a picture that I want you to get. There is a slope here of ten feet in a hundred, or fifteen feet in a hundred. That is the way this land slopes. When-



Constructing a terrace with a small road grader.

—(Courtesy Missouri Experiment Station)

ever we have a heavy rain it is inclined to wash, especially like the rain we had here night before last. I don't know whether you had it here, but we had it in Quincy night before last. At a meeting last night some men were talking to me and said, "Gracious, that rain did damage plowed fields." Here are these gullies. We can imagine they are gullies. As soon as it is dry enough for the farmer to get out there and fix it he will put some straw in here and here and here (indicating). I had a man tell me the other day, "By golly, I ran out of hedge brush. I don't know what to do now, unless I try your scheme." It is not my scheme. It is as old as the hills in the south where they grow cotton, with nothing in the ground to hold it from washing.

Terracing will do it. It is a simple little operation. This is your farm, you want to terrace it. I would come out with a simple level that costs about twenty dollars, that every farm bureau ought to have so that farmers can get it to determine levels for buildings, terraces, etc. We go out there and look over the forty. Now the first thing we need to determine is where are we going to put the water? Its natural course is over here (indicating), and if it goes there it is going to go pretty rapidly, because the land slopes fifteen or twenty feet to the hundred, and having that slope a two or three or four inch rain has a tremendous power to carry dirt,—not only the dirt, but the plant food and organic matter from the entire surface.

We go out there and the first thing we need to determine is where we are going to put the water. We can put it over here or there in this particular field. We have two ways to get rid of that water. All right, we will start up on the hillside, and with our level we will start at a point right here (indicating), and we are going to run a line that falls six inches in a hundred feet. We are going to decide to draw the water off at this side, wherever the line goes. It runs right here (indicating), not very straight. It will curve around. It depends on how much it is cut up by the gullies. If there is a roadside of course the water will follow along the roadside and cut a pretty big ditch on this side of the road.

Then the next thing we drop down the hillside three to five feet lower than that point and we run another line here (indicating), and it goes out there. Then we start down here another five feet lower than that, and here



Constructing a terrace with a V-shaped drag
—(Courtesy Missouri Experiment Station)

we run another line. You see I am just guessing where this line will run. Now after we have run those lines in that manner, while we are doing that, you and I will have the farm hand come out with a team and plow. These stakes are set every fifty feet. That fall is six inches in a hundred feet and he plows there just like he was going to start a land. The next thing is to build a ridge there. In that way all the water that falls above runs down to this terrace and on out.

Now after you have built them you can plow over them just like they were not there. Just plow back and forth. The only thing you need to do, probably every couple of years, is to take a grader or a drag and drag them up. You all know how long an old back furrow that you have thrown up a couple of times in the same place lasts. You know how much longer a ridge through there like a roadgrade lasts.

Now let me give you one figure that will help you to understand the value of that and then I am through. If we have a slope on a piece of land of ten feet in a hundred, when we have a four inch rain that four inch rain has the power to carry a given amount of dirt, depending on organic matter there to hold it. If it is bare a four inch rain on that slope will carry a given amount of dirt. Let us say it will take a pound of dirt and organic matter off a square rod, for illustration, with a slope of ten feet in a hundred. Now then, if we double the slope to twenty feet in a hundred we increase the power of the same amount of rainfall to carry the dirt, don't we, because it slopes more? How much more do you suppose we increase it? You have been following it pretty closely. How much do you suppose?

Q. Fifty times.

Mr. GOUGLER: Pretty good. Does anybody else want to guess?

PRESIDENT MANN: About the thirteenth power.

Mr. GOUGLER: Let us get it in his terms. He says the thirteenth power. That is getting into deep arithmetic.

Q. That is beyond me, the thirteenth power.

Mr. GOUGLER: If we double the velocity of the water we increase the wearing or carrying power of the water sixty-four times. If we double the velocity we increase the power to wash sixty-four times. All right, now let us reverse the thing. Say this field is a field that slopes ten feet in a hundred and we are going to make the water fall six inches in a hundred. Can you imagine how much that will decrease the power of the water to carry dirt? Men, it is not only the gulley that washes, that is your loss. That is what you see. You do not see what is going off the whole surface, do you?

I thank you.

PRESIDENT MANN: The more we study soil the closer the relation is realized between soils and animal nutrition, the more we see the value of the things in the soil that must be used in animal and human nutrition, and hence limestone. Bacteria love sweet things and the fungi, molds and mildews love sour things. It is the sweet things we want, that is one reason we use limestone.

Another use for limestone is that plants must have it to construct their own selves, and hence animals must have it to construct themselves. Another thing we use limestone for is to preserve not only the proper reactions in the soil, but to preserve the proper reactions in the animals and plants. They resist the molds and mildews a good deal by having sweet clovers, then they resist the bacteria a good deal by having sour stomachs, and we must maintain the reactions in the animal body. We must also maintain certain reactions in the plants themselves. Parts of the plants are sour and parts of them are sweet, and the plants must have limestone to preserve their proper reactions. Then we have the physical results from limestone. We want a soil that is open, porous and loose. As we go along we can just grasp a few of the great values which come from limestone, and being basic to agriculture it means that we must know more about our supplies and the quality of the limestone that we have to deal with.

Now the first special committee that was appointed by the Illinois Agricultural Association, which is a business organization, was a committee whose business it was to see that the farmers of the state could get limestone and phosphate, and we are glad to have at this meeting Mr. Bent, who is director of that department, to tell us something about the limestone deposits in the state, their quality, their extensiveness and all those things. Mr. Bent will now talk to us. [Applause.]

LIMESTONE SUPPLIES FOR ILLINOIS.

(J. R. Bent.)

MR. CHAIRMAN AND FRIENDS: Agriculture is one of the oldest, if not the oldest, industry. As an art, it is very old. As a science, it is comparatively new. These are basic facts with which we are all familiar. Under agricul-



J. R. Bent

ture as an art, some form of lime has been applied to the soil as a beneficial conditioner for generations, but scientific knowledge covering its action, the reason for the results, and the best form and way in which it should be applied is comparatively new, and we are told that there is even yet much to be learned. The burning of lump limestone, in order to make caustic lime, is an industry that has been practiced for centuries. Not only has such lime been used for construction purposes and in the arts and sciences, but, in the past and in the older agricultural regions, it has been the prevailing, if not the exclusive, form in which calcium has been applied to the soil and an alkaline condition maintained. It would be a mistake, I think, to jump to the conclusion that this is a practical demonstration or proof of its superiority over raw limestone for soil treatment purposes. The real reason for the fact that raw limestone has been used in recent years only and that even yet the practice has not been generally adopted, lies in the further

fact that the mechanical equipment and industrial means under which stone can be economically reduced to fine sizes are developments which have taken place within the recollection of the present older generation.

The manufacture and use of explosives are not new, but the possibilities and effectiveness of explosives in the quarrying industry were decidedly limited until the advent in recent years of the power driven drill. Quickly following this development came also the invention and development of first the power crusher, then pulverizing and milling machinery. It is therefore only in recent years that it has been possible, within a reasonable cost, to prepare raw limestone or reduce it to a degree of fineness suitable for application to the soil. Prior to that time, the only form in which the non-caustic or carbonate form of lime could be applied was as chalk, marl, or air slaked lime, and the available supplies of these were too limited in quantity and distribution to constitute much of a factor in comparison with the need.

One of the brightest spots in the history of scientific agriculture, and a fact of which every true Illinois citizen should be proud is the advent of Dr. Hopkins and his revolutionary discoveries and doctrines so quickly following these great developments in the quarrying industry. These facts made Illinois a pioneer and leader. It is up to the Illinois farmer to see that this proud position of his state is maintained.

There is an old saying that youth must learn by experience as it will not profit by the experience of the past generations. This principle has seemed to hold literally good in its application to agricultural regions. As a rule, the older agricultural regions are either entirely abandoned or the methods that are adopted are conservative and have due regard to established scientific facts—particularly as they have reference to the maintenance of soil fertility and productivity; but the newer regions are prone to ignore problems of soil fertility. Attention has frequently been called by different writers and speakers to the fact that, if you start on the Atlantic coast and go West, as you step from state to state until you finally arrive in Iowa, the yield per acre increases. The reason for this fact is not that

the soil was originally better as you go West, but that it is newer and has not been so extensively robbed. President Kinley of our State University recently called an agricultural conference, one of the prime reasons for which lay in the fact that Illinois is today face to face with diminishing agricultural returns. Just recently, a professional agricultural authority from one of our northwestern states remarked to me that his state would never need limestone as its soil is all sweet. It seems that we are determined to each prove for himself, that soil alkalinity under cropping conditions is not a self-maintaining or a permanent condition.

The University of Illinois, Experiment Station, the Illinois Farmers' Institute, and the Farm Advisors have each, in turn and in different ways, effectively preached the gospel of soil fertility and, as a factor thereof, the use of limestone. The various leading railroads and the limestone producers have played their parts in bringing into practice the teachings and doctrines promulgated by these educational agencies. With the development of these agencies and with the stimulating effect of high prices and demand for maximum crop production during and just after the war, the growth in the use of limestone, as compared with the past, was remarkably rapid and great, but, when viewed in the light of the real need, it has been insignificant.

LIMESTONE NEEDS IN ILLINOIS.

Dr. Bauer of the State University says that there are twenty million acres of sour land in Illinois; that in the southern thirty-two counties alone there are ten million acres which are so sour that they are fairly crying for an initial application of five tons of limestone per acre, or fifty million tons; and that thereafter they should receive upkeep applications aggregating several million tons annually. As compared with these figures we have actually used for the entire state as follows:

	Tons.
1911	32,000
1912	46,000
1913	72,000
1914 (Estimated)	82,000
1915	94,000
1916 (Estimated)	113,000
1917 (Estimated)	132,000
1918	200,000
1919	350,000

In the latter part of 1920, the demand rapidly fell off. That year shows a total of 300,000 tons (50,000 tons less than the previous year); and last year is estimated at not to exceed 140,000 to 150,000 tons—considerably less than half of our high point. Obviously, something is the matter either with our doctrine or with our practice, whatever the cause may be. Perhaps the outstanding reasons for the serious curtailment of demand during the last year and a half are; first, the disastrously low prices at which farm products have sold in comparison with other commodities and the resultant financial inability of the farmer; second, the fact that as compared with former years, the quarry prices mounted to a high point in response to the rapidly developing demand; third, the heavy advances in freight rates.

The first of these, low farm prices, is now the subject of my remarks today. We may pass it with the expressed hope that the present tendency back in the right direction may be accelerated and the day hastened when this unfortunate condition shall have been righted.

PORTABLE CRUSHING PLANTS.

During the last two years there has been a great deal of interest displayed in the possibility of the rather widespread and general establishment of what may be termed local portable crushing outfits, each of which might serve a community, the area of which would be determined by the natural hauling radius. Many have conceived the idea that such

plants located at points where deposits of limestone upon which they may operate exist would at once solve the difficulty of high quarry prices and high freight rates, but it is a fact that such plants cannot operate as efficiently as the large well-equipped permanently located commercial shipping plants. The tonnage life per dollar of investment—in other words, the depreciation factor per ton, and the tonnage output per hour relative to investment, the power factor and the labor factor, all are expensively inefficient when compared with the well organized and equipped large and permanent shipping plant. The portable plant is a "Rear Trench" and is indicated as a choice if and only to the extent that the available supply from commercial sources involves exorbitant quarry prices, extra long and expensive freight shipments or excessively long wagon hauls from the nearest local railroad station at which the cars are unloaded. Perhaps the most potent and determining of these considerations is the latter. We have some communities which are ten to fifteen miles, or even farther, from the railroad station, and fortunately in the case of some of these communities, they have local and easily available deposits of limestone of a satisfactory quality. A portable plant for these communities is the only salvation, but the probability is that the pulverized stone turned out by the portable plant in these cases will cost more at the plant than the f. o. b. delivery station price, throughout the state as a whole, of stone from commercial sources.

. This department has examined, studied and advised on the possibility of establishing portable plants at 181 sites in 35 counties, and we found a large majority of these places were located so close to a railroad station that an enterprise of this kind would not have succeeded because of its inability to compete with a shipped-in supply. I am touching upon only a few of the outstanding considerations in connection with such problems. The questions of the quality of the stone, of its quarryability, of its accessibility to the highway, of its availability by purchase or royalty arrangement, of the ability to satisfactorily manage and man the work with local talent and keep the outfit reasonably and efficiently busy, are all very vital factors.

We have in Illinois more commercial quarries and shipping plants than perhaps the average layman realizes. Some of these represent very large investments and output ability. In general, we may say that there are two main producing districts. First, the northeastern or general Chicago district producers, which are operating in the extensive dolomitic limestone known as the Niagara deposit. Some of the points in this district at which plants are located are Kankakee, Thornton, Gary, McCook, Elmhurst and Joliet. The second largest group is that of the East St. Louis district. This stone differs from that of the Chicago district in that it is, as a rule, more crystalline, higher in calcium and lower in magnesium. In saying this, I do not wish to be misunderstood as attempting in this connection to place either of these stones above the other in its value for soil treatment purposes. Both are good and are needed. There are other individual locations. Without mentioning all, I will mention as more or less prominent the state plant in connection with the penitentiary at Chester, and the commercial plants located at Whitehill in the extreme southern part of the state and at Alton, Marblehead and Gladstone all along the western side of the state, and at Rockford on the north edge. Also, we have just over the line in other states and supplying Illinois with more or less tonnage, plants located at Buffalo, Linwood and Bettendorf, Iowa, and Mitchell and Greencastle, Indiana.

FORMS OF LIMESTONE.

The forms in which raw limestone is produced for direct application to the soil may be divided into three main classes. First, by-product screenings. Second, directly pulverized material. Third, ground stone. Ground stone is not a real factor in Illinois. It is stone that has been

ground to the fineness of flour and is, therefore, much more expensive. It is used somewhat extensively in some of the eastern states where the farming practices are more intensive, but the Illinois theory is that the coarser material used in larger quantity at the same total cost, will supply somewhere near the same amount of fines for immediate availability and will leave the coarser particles to gradually disintegrate and dissolve and thereby furnish a "maintenance" ration over a longer period of time.

What I referred to first as screenings, or what is sometimes called "Limestone Dust," is a by-product from the prime product of crushed stone. In reducing by crushing and in sizing by screening, the stone to meet the requirements of the building trade as a concrete aggregate and of the highway authorities for concrete and macadam roads and of the railroads for ballast, it is necessary to eliminate by revolving screens all material which runs one-quarter inch or less in size. Naturally, this eliminated material varies in the proportion which it carries of the finer dust to the coarser particles. This proportion is affected by such factors as the physical structure of the stone and the mechanical means used in its reduction. In some states, especially where the stone is relatively hard, some of this material is used as a top course for macadam roads, but generally speaking that is not the case in Illinois. A limited amount is used for railroad station yards and paths. Some of the fine powder is used as a filler in cheap fertilizers, but much the greater percentage of this by-product must be sold, just as it comes from the screen, for direct application to the soil. As a by-product, it has been subject to the law of supply and demand as applied to by-products and its selling price has been determined solely by this law, without regard to a ratable portion of the cost of production. The price of by-products is prone to move in the contrary direction to the demand for and the price of the prime products from which they come. When the demand for a certain prime product is great and the price thereof mounts in consequence, there follows an increased production, carrying with it an increase in production of the by-product, regardless of the demand for the latter and if the demand for the by-product does not simultaneously increase, at least in proportion, there follows a drop in the by-product's price. The two prices thus moving away from each other instead of in the same direction.

Throughout the early years during which the use of limestone was being advocated by the authorities and tried out by the farmers, the demand was less than the unavoidable by-product supply. Under these conditions, it was natural that many producers were willing to accept most any price that would enable them to dispose of their output, and the consideration of an equitable share of the total cost of production was not a factor. Taking the state as a whole, it was not, perhaps, until 1918 or 1919 that the demand for agricultural stone overtook and passed the production of by-product screenings and it became necessary in order to meet the demand to resort to the use of pulverizing machinery for the further reduction of sizes of stone already marketable, as railroad ballast, concrete aggregate and road stone; in other words, to resort to what I have referred to as the second class of agricultural limestone, i. e.; directly pulverized material. This meant that agricultural stone there and then passed from the realm of a by-product into the realm of a prime product and the price instead of being controlled by the consideration of moving a material that was in the way, was controlled by the consideration of the cost of production, plus a profit.

Obviously, the cost of producing agricultural stone, if it involves a further processing of marketable commercial stone, is to that extent greater than the cost of producing the commercial stone. Certain mischievous factors crept in at this point. First, it is not surprising, though it was unfortunate, that the price of the relatively small tonnage of directly pulverized material increased and controlled the price of the relatively large tonnage of the by-product material. Second, the increased and rapidly increasing demand, which made direct production necessary, encouraged, whether or not it justified, the producers in decidedly marking up their

prices and margins of profit. True to the rule that one extreme induces the opposite, a revulsion set in. The feeling on the part of the farmers that something was wrong and that they were being held up remained in the background as long as the price of farm products remained high and limestone seemed a good investment at any price, but when, in the late summer and fall of 1920, the price of farm products began to rapidly fall and at about the same time the heavy general advance in freight rates took place, the agricultural limestone situation became impossible and broke. Farmers quit buying. Direct pulverization was discontinued. By-product screenings began to accumulate at the plants of producers. The producers themselves were reluctant to believe that the situation could last and it was not until well along in 1921 that they began to realize the full seriousness of the situation and a number of them made big reductions in their prices. Not yet, has the demand been restored and a number of the factors in the situation must be relieved before it can be. Of course, a most potent and vital factor is the farmer's financial inability to buy and the righting of the present distressful situation in this respect lies, of course, outside of the limestone problem and is not the subject of this discussion.

GOVERNING FACTORS IN LIMESTONE SUPPLY.

In studying the problem of a satisfactory and adequate limestone supply for the future, let us eliminate the present unfortunate financial condition of the farmer, which we hope is but temporary, and confine our consideration to those factors which, under normal times, of necessity must control if the production of, traffic in, and use of agricultural limestone are to be stabilized and developed as they should be. As I see it, these are:

First, efficient and adequate production;

Second, reasonable profit to the producer;

Third, efficient distribution and availability of supply;

Fourth, realization by the farmer of the price basis and conditions upon which he can, with both profit and fairness to himself and the producer, make free use of this material.

Let us consider each of these factors in some detail.

Efficient and adequate production implies a sufficient number of plants of comparatively large, though not unwieldily or inflexible output ability, located upon deposits of good quality which can be quarried with reasonable overhead and operating cost and are adjacent to some satisfactory railroad connection. There must be also an adequate and economical supply of fuel, labor, etc. The management must be experienced and good, including the financing, engineering, employment and commercial branches. The operation, in order to be truly efficient, must be as uniform as possible and cover a reasonably long season or portion of the year.

The second factor is that of a reasonable profit to the producer. The selling price of the product must be placed at the point where it will cover cost of efficient production and include a reasonable profit. In other words, it must be low enough to penalize inefficiency and to preclude unreasonably large profits, while at the same time rewarding efficient production with a profit large enough to encourage continued production and good service to meet the demand as the latter may grow. Too low a price destroys supply. Too high a price destroys demand. As long as the tonnage of the traffic hovers around the limit of by-product production of screenings, we are bound to have the bad pendulum effect of action and reaction or what I may describe in other words as being a vicious circle of low prices stimulating the demand beyond the point of the by-product supply, causing much higher prices, which discourage demand to a point below the by-product supply and once again low prices. Not until the farmers generally understand the difference between the factors which control the by-product and those that control a prime product can they realize what a perpetuating and aggravating effect this distinction has upon the vicious circle, or be able to

break away and develop a general use of agricultural limestone to a tonnage point more nearly commensurate with the needs of the soil and the dictates of good farming practice. It is human nature that none of us like to be held up and robbed. We would rather lose or waste two dollars than to be robbed of one, but, assuming that the quarry price and freight rates are established at a justifiable and fair point, the only considerations which need affect the farmer's decision to buy are:

First, whether or not it is a good investment; and,

Second, whether or not he is financially able to buy.

Each farmer will have to answer the last of these for himself, but on the former, I would like to again quote from Dr. Bauer of the University. He says that even on the present low prices of farm products, as an average proposition on a rotation of corn, oats, clover and wheat a ton of limestone applied to the sour land of southern Illinois would show against its cost a return of \$10.22 and in the corn belt a return of \$3.82. In other words, these figures are what it is worth to such farmers today.

PROBLEM OF DISTRIBUTION.

I have said that efficient distribution is a vital factor in the solution of the limestone problem. Under this head comes:

First, the distribution of the producing plants themselves. So far as it is possible, from an operating standpoint, they should be located so as to favor the minimum average shipping distance for the distribution of the product. Also, as far as is possible, they should be located so as to avoid expensive switching charges, instead, being directly adjacent to railroads which can give prompt service and adequate car supply. The outgoing shipments should move, wherever possible, in the direction of the natural flow of empty cars instead of in the direction of and in competition with other higher class commodities. These theoretical ideas are subject to natural physical limitations. For instance, Providence did not locate suitable limestone deposits just where we might prefer to have them. Neither did the railroad companies locate their lines with prime consideration to these deposits.

Unfortunately, in the eyes of the commercial producers, consideration of the agricultural welfare of the state as a whole, does not weigh nearly so heavily in the balance as do those of a commercially competitive or money making nature and, therefore, under present conditions it may easily happen that some districts are, comparatively speaking, blessed with an ample, economical supply, while others are left with an inadequate, expensive and unsatisfactory supply. These are, however, considerations which should determine whether or not we should, in our work, encourage or discourage any particular effort or movement toward further development of shipping plants at given points. In the interest of efficiency and the agricultural welfare of the state as a whole, future development of production should be, so far as possible, co-ordinated and intelligently balanced through the influence of some such central agency.

LOCAL STORAGE NEEDS.

I feel that one of the lines along which there is the most room for improvement in efficient distribution is that of storage provision. Storage, if properly worked out, can mean much more than simply better distribution. It should affect very favorably the cost of production by constituting a shock absorber between the need for uniform, steady output at the producing end and the seasonally concentrated demand at the consuming end. While protecting production against fluctuating demand, it should also protect transportation—we have frequently experienced annoying delays and limitations through the inability of the railroad companies to supply, at the right time, sufficient equipment and transportation service. Again, storage should make it possible for every farmer to secure the quantity he needs

as and when he needs it and should largely do away with the annoying and expensive need for the farmer on short notice to meet and unload one or more carloads within a couple of days' time, regardless of the condition of the roads or of his work or other demands upon his time or that of his teams. There can be storage at the point of production; there can be community storage at the rural railroad stations, or there can be individual farm storage, but the only one of these that meets fairly satisfactorily the foregoing requirements, is that of storage at local railroad stations. It is our hope that the time will come when practically all rural stations throughout the state will have such storage provision; and it is our desire to assist in every way we can to bring this condition to pass.

There are many types of storage sheds, bins, equipment, etc. Some provide thorough protection from the elements; some provide labor saving devices and conveniences; others are relatively crude and simple. The requirements and financial ability of the various communities will differ, but the essential aim should be that of storage itself. Let me repeat that I believe that this will in time prove to be one of the most profitable lines along which thought, effort and money may be spent.

LIMESTONE FREIGHT RATES.

At the outset of 1921, it was evident that something must be done regarding limestone freight rates. There seemed to be a general feeling that the Illinois Agricultural Association should take the lead in efforts to relieve the situation. Accordingly, we called a large and representative conference for February 1st a year ago. In addition to the officers and executive committeemen of the Illinois Agricultural Association and members of the Phosphate-Limestone Advisory Committee of that association, representatives of the following organizations were invited: The American Farm Bureau Federation; the Farm Advisors of Illinois; the Illinois Farmers' Institute; the Agricultural College and Extension Work of the State University; the Southern Illinois Development Association and various representative individual farmers and limestone producers in and adjacent to Illinois; also representatives of the phosphate producers of Tennessee. The response was very complete and all of the interests numerated were well represented at the conference. The decision to not include at this first conference representatives of the carriers was deliberate but by no means based upon an unfriendly or hostile attitude toward the railroads.

The prime purposes of the meeting were to bring out, discuss, and coordinate the various views and angles of approach to the problem from the standpoint of the consumer's needs and interests and to develop a program upon which all of these closely related interests could unite in the one great interest of the continuance of soil building and maintenance. The plan being to limit the consideration rigidly to the effect of the transportation costs upon the use of these commodities and the extent to which we should seek relief, it was thought that the producers might add material help in the discussion and so be properly included. It was felt that the discussion should not be allowed to take the form of a mere impotent complaint, but should be encouraged into lines of constructive analysis, criticism, and suggestion, and it is a pleasure to record that the meeting actually developed along these lines.

After a thorough discussion, a Committee of Fourteen was appointed to go into a more detailed analysis of the conditions and to prepare and present the case. The Committee was divided into sub-committees which prepared the facts and arguments from the various angles of scientific agriculture, commercial problems, and technical transportation problems. The work was most thoroughly done and, during the late summer and early fall, negotiations with the railroads began. It was necessary to have many individual interviews with the higher officials of each of the most important roads concerned. To make a long story short, we finally arrived at a basis for a single line mileage scale, lower at all points than the then existing

mileage scale and materially lower on the longer distances than even the pre-war mileage scale. One after another a number of the prominent roads adopted this scale. To date, there are sixteen that have applied it and the total mileage of these sixteen roads within Illinois amounts to nearly eight thousand or nearly two-thirds of the total mileage of all roads within the state. There are a number of important roads, however, that have not even yet adopted the scale; also the problem of a suitable basis for what is known as joint hauls, or traffic involving two or more roads, has not yet been worked out. The latter is "on the boards" now. It does not seem possible that anything can be accomplished until the general rate hearings, which are taking place at present at Washington, have been concluded and the Interstate Commerce Commission has handed down some decision. The roads are all in a position where they are unwilling to take any voluntary steps until they know what is to be legislated upon them. I am hoping that this situation will clear up and settle down by the first of April, or soon thereafter, and that we will then be able to attack, with prospect of results, this joint haul problem. Even as it is, Illinois seems to be the object of envy from the limestone producers and users of other states on this freight rate matter.

FAULTY DISTRIBUTION, NOT OVER-PRODUCTION.

Before concluding my remarks, I would like to emphasize a distinction which, I think, is too often entirely overlooked, or at least minimized. It is the distinction between maximum production and efficient production. Authorities tell us that, taking the world as a whole today, there is not an over-production but rather an under-production of food crops. What seems to us in America and is, in effect, an over-production at this time is due to the fact that distribution is out of joint. We should not, however, allow considerations of the need for curtailed production, if such really exists, to make us less efficient, but we should instead strive to be more efficient in production. Efficiency is a money maker in times of prosperity and high prices, but it is also a money saver,—yes, even a business life saver,—in times of low prices and distress. If there is really an over-production and prices of farm crops are low relative to the cost of production, would we not be better off in every respect if we could grow three-fourths as much on two-thirds the acreage? Limestone and phosphorus, or in other words soil fertility, constitute the cornerstone of agricultural efficiency. I quote from an article in Harvey's Weekly, dated September 27, 1919:

"British economists are urging an increase of agricultural production in the United Kingdom, and are pointing out the discreditable contrast between that country and Germany, before the war, in the amount of staples produced in proportion to the total area under cultivation. The contrast between those countries and the United States is still more striking and more discreditable. Thus to each 100 acres of cultivated land Germany produced 33 tons of wheat, Great Britain 15 tons, and the United States $4\frac{1}{2}$ tons. To each 100 acres Germany produced 55 tons of potatoes, Great Britain 11 tons, and the United States $2\frac{1}{2}$ tons. To each 100 acres Germany produced 28 tons of milk, Great Britain $17\frac{1}{2}$ tons, and the United States 5 tons. It is doubtless true that those countries devote a larger proportion of their land to these crops than does the United States, where vast areas are planted in cotton, corn, and other crops not grown in Europe. Nevertheless the contrast is also due largely to the difference in methods of cultivation, and the consequently much smaller production from each acre here than there. We shall be great gainers if intensive cultivation is promoted as a result of necessary war-thrift."

I would like to ask: Did the war make us more thrifty and efficient, or did it make us more extravagant? Did it encourage well balanced diversified and conservative methods of agricultural production or did it cause

us to ignore, for the time being, the welfare of the soil upon which our agricultural prosperity rests? If this country is to continue to prosper. it must be a factor in the world's markets and, if we are to compete in the world's markets agriculturally, we must compare favorably with the older countries in our attention to permanent soil fertility and efficient production.

I wish to close by expressing the hope and the belief that the fine teamwork and spirit of co-operation that exists between the various agencies, the State University, Experiment Station, Farmers' Institute, Farm Advisors' Association, and the Illinois Agricultural Association, will continue and will bear much valuable fruit for the good of all.

I thank you. [Applause.]

PRESIDENT MANN: We all agree that was a mighty fine address and one which will be of great value in the annual report to be published later. We have had a good session and I hope limestone, phosphate and clover will ring in your ears when you go to sleep.

Now I want to sum up just in a few words the two great problems of agricultural production, the basic problems. One is the fixation of atmospheric nitrogen, which in plain English means the growth of legumes like clover, and the other is the fixation of atmospheric carbon in the form of sugar, starches, and so forth. The fixation of those things from the air is the farmer's problem. Legumes will grow and fix the atmospheric nitrogen in the proportion as they get nitrogen and phosphorus from the soil, and we can fix the atmospheric carbon to make sugars, starches, oils, etc., which constitute 97 per cent of our staple grain crops, in the proportion in which the plants get limestone, phosphorus and nitrogen out of the soil.

WEDNESDAY AFTERNOON SESSION.

February 22, 1922, 1:30 o'clock P. M.

Vocal SoloH. W. Stewart

PRESIDENT MANN: Our speakers this morning discussed farming from the soil side. They told you what was necessary to make soil fertile and our agricultural permanence depends largely on our fertility. Now we must learn more about getting the things out of the soil after we have put them in the soil. We don't know much about our crops, especially the great staple crop of corn. Wheat had been under training of the human hand for thousands of years, and some of the other crops, and they are pretty well trained plants, but here is our great staple crop of corn that the human hand has not been dealing with very long and we know very little about that great plant. That is going to be our study a good deal this afternoon, learning, if we can, how to help this wonderful plant to take more things out of the soil and give us a response in crops. A good way to do that is to study it from the practical side of production. We have a man who has been giving a good deal of attention to that for a number of years, and that is Mr. Mosher the farm Adviser in Woodford County, and he will tell you what he has done with the training of corn for a few years. Mr. Mosher, of Woodford County. [Applause.]

UTILITY CORN TESTS.

(M. L. Mosher.)

MR. PRESIDENT, AND GENTLEMEN OF THE ILLINOIS FARMERS' INSTITUTE: In approaching this subject I wish to present a few things that have led up to the work that has been done by the Woodford County Farm Bureau during the last three years. Then I wish to present that work to you, telling how the Woodford County Farm Bureau corn test was carried on, with some of the results. Later, with this bushel of corn that has been

brought in I wish to put the lessons which we have learned in such a form that you can take them back home with you and apply them. Unless we can take these things home and apply them to our own work there is not very much gained by having been here.



Representative Ears from the Twelve Highest Yielding Lots of Seed.

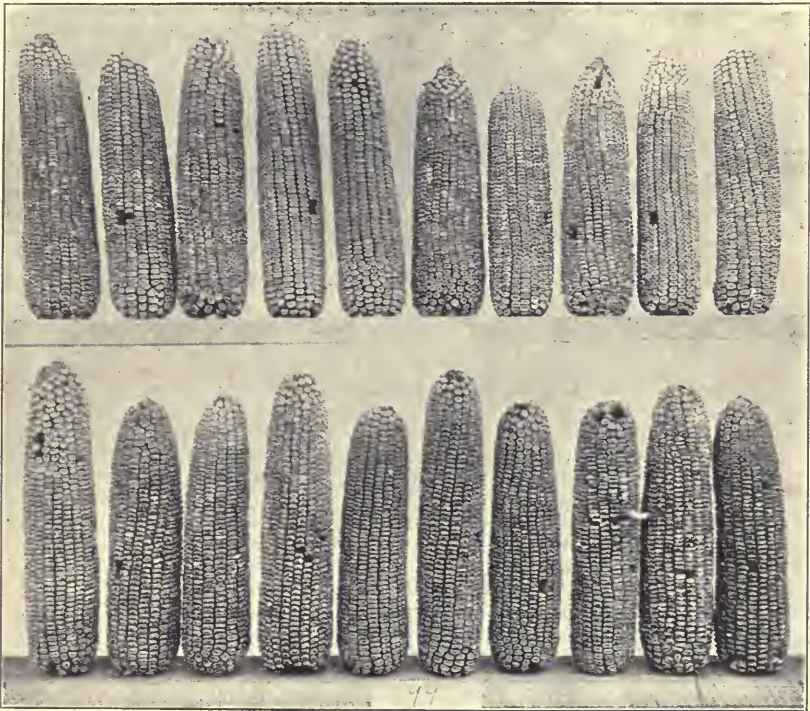
In leading up to the work that was done in Woodford County beginning in 1919 we will have to go back to 1903, because that Woodford County corn test was not begun in 1919, it was commenced in 1903, back in Sioux County in Iowa. Many of you older men and some of the younger ones have had the privilege of coming in contact with Professor Holden who was with the University of Illinois for a few years, with the Funk Brothers Seed Company for a time, and then for several years in charge of the Department of Agronomy first and then with the Department of Agricultural Extension of the Iowa State College. It was while he was there that this work really began. There were some of the people who came down to the Farmers' Short Course at Ames and were inspired by the work that Professor Holden and his associates had done there who asked if the work could not be brought home to them so that more of their people could see it. This led to the beginning of what was known as the County Farm Demonstration Work.

In the county farm demonstration work there were three lines of work done with corn that led up to the doing of the work that is just being completed this year in Woodford County. One line was what was known as the "Farmers' Variety Test." In carrying that on we would go into a county where they had applied for this work and arrangements had been made with county boards of supervisors to conduct the work on the County Farm. Men would drive through the county and gather seed corn from people in the county, getting from sixty to eighty samples from the planter boxes just as the men were planting the corn in the fields. When they had gathered up sixty to eighty samples they would be taken to the county farm and planted side by side. In the fall a picnic would be held, people would get together and see the difference in the corn. The corn would be husked out, graded and records kept. A little publication would be gotten out showing the peculiar differences there were in the corn. After eight years of that kind of work, in 32 counties all over the state of Iowa, in which corn from 4516 different farms was tested, the significant condition was learned that when we got a large number of samples of corn just as the farmers of any county would plant them, put them side by side under the same conditions, we found that the best ten percent on an average of those eight years' work yielded just about eleven bushels per acre more than the average of all of the corn in the test. At the same time there would be ten percent yielding about thirteen bushels per acre less than the average corn.

After we had done that for several years we got to the point where we knew almost to a certainty when we gathered up the samples in the

spring, what the results would be in the fall, because we found it to hold almost invariably true that the ten percent best lot of corn in the community would produce from ten to twelve bushels per acre more than the average corn in that community.

Another line of work which was carried on was what was known as the imported seed test. In Iowa for the last nineteen years there has been held an annual corn show. It is one of the big events in the year. The state is divided into several districts and for seven years of the time that these county tests were going on we would get the prize winning samples at the State show. That is, we would get corn from the men who had the prize winning samples and plant those side by side with this corn grown in the community, and we found this significant condition, that in an average year the home grown seed, not the best but the average home grown seed, would produce from two to two and a half bushels per acre more than the supposedly best seed of the state, and among the home grown corn there would be that ten percent which would yield about twelve and a half to thirteen bushels per acre more than this supposedly best corn of the state. Now, we attributed that in those days to the so-called fact that it does not pay to take corn away from the community in which it has been developed, and we thought that that was the principal reason why the corn which was winning the prizes at the corn show was a lower yielding corn



Two of The Low Yielding Samples

No. 99 was by far the lowest yielding sample in 1919 and 1920. It was not in the 1921 test, but could not have come out of last place for the three year average, even though it had gone to first place in 1921. No. 35 and No. 99 are both typical of many low yielding lots.

than much of the corn that we got out of the planter boxes just as we got it from Tom, Dick and Harry throughout the counties.

Another significant test that was carried on in connection with that work was what we called the single ear test. We would get forty ears from one man, or forty ears from each of two or three men in one county. The men usually picked out pretty fair ears of corn. We would number those from one to forty, shell off about half of the corn from the ear and plant corn from ear one in row one, ear two in row two, and so on. That work was done with corn from 144 different men in the 32 counties over six years' of time, and we found this condition there, that one-fourth of a man's corn would yield on an average about eleven or twelve bushels per acre more than the average of all of his corn. So we realized that if there was some way by which we could pick the one-fourth best ears out of the man's corn by any means of selection we would be getting ahead in this matter of corn selection.

So when the opportunity came, when the farm bureau work got under way, a plan of work was undertaken to actually find who it was in the county who had the best yielding corn through a series of tests, making sure that a man had corn that would do well not only one year but each of several years, and then to distribute that corn. Right here let me mention that I believe that that is one of the best kinds of work for a farm bureau to do, to take the work of the scientists of our colleges, experiment station, Department of Agriculture, and apply it to the work on our farms in an organized way. In the corn test that was carried on in Woodford County the farm bureau simply undertook to make use of that work that had been carried on for several years in Iowa, and similar work carried on in other states. I mention the Iowa work because I was familiar with it, having had considerable to do with it during the years that was being carried on. The farm bureau in Woodford County took that work and applied it in a way which would enable the men in the county to know where the high yielding, good quality type of corn was, and worked out a plan whereby that seed could be distributed throughout the county. The work that was undertaken in Woodford County was begun three years ago.

In order that you may understand clearly just how it was carried on, that I may not leave out some of the details and not take too much of your time in rambling around, I am going to read from the report which was gotten out covering that work.

FACTORS IN SEED CORN SELECTION.

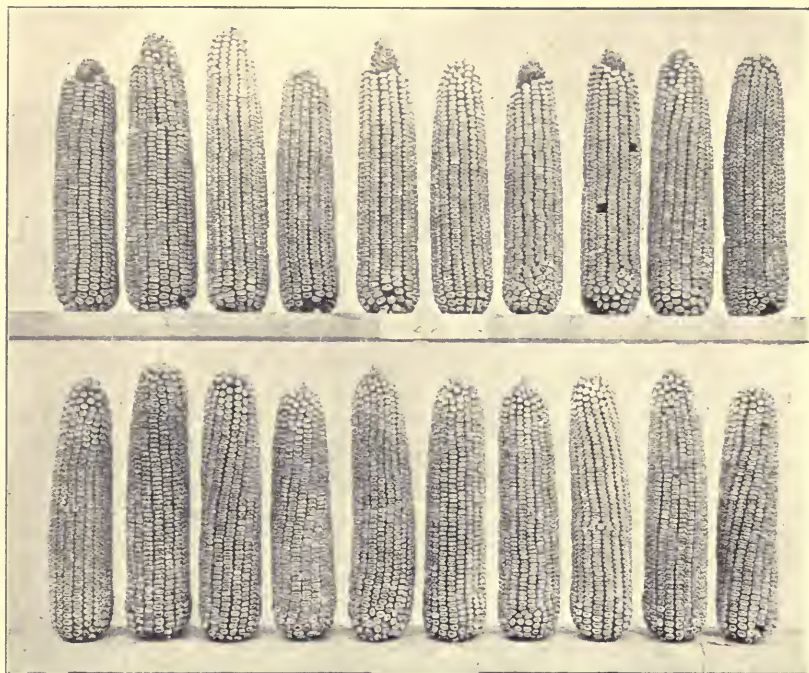
During January, 1919, each of one hundred eighteen men brought in one hundred ears of his seed corn for this test. Most of the men selected the one hundred ears carefully from their supply of seed. A few brought it without any special selection.

All but three or four samples had been grown in the county for five or more years. We limited the test to such home grown seed because of the generally accepted conclusion that the best seed corn for any locality is that which has been grown for several years in that locality.

As each sample was brought in, with the help of the owner we discarded twenty ears which were loose on the cob, very light, or had apparent defects other than so-called defects of type. We did not meddle with the type of corn as selected by the owner.

Ten representative ears were then selected from the eighty and numbered with the owners number. These ten-ear samples were kept to use in exhibits showing the results of the test.

The remaining seventy ears were then numbered consecutively from one to seventy. Three rows of kernels were shelled from each ear and placed in an envelope numbered the same as the ear. The owner of each sample took the seventy ears home with him and the shelled samples were brought to the Farm Bureau office.



The Two High Yielding Samples

Ten-ear samples selected from bushel lots grown by George Krug (No. 62) and E. R. Schertz (No. 101) in 1920, the middle year of the test.

A careful germination test of ten grains from each envelope was made and the corn from the envelopes which did not show perfect germination was discarded. The corn from each of the remaining envelopes was then examined carefully, and any lots which showed badly shrunk kernels or apparently diseased kernels were discarded. The corn from the remaining envelopes was mixed together. This sample of corn from the ears showing perfect germination, full kernel development, and apparent freedom from disease was the one planted in the field. As an average of the one hundred eighteen samples, corn from about fifty ears was mixed together to make the sample planted. A small sample of each lot of shelled seed ready for planting was saved to be used in exhibits of the work.

The owner of each lot of seed was notified of the numbers of the ears selected for the field test, and in most cases the men picked those ears out, shelled them together and planted such seed separately from the rest of their corn.

HOW THE FIELD TEST WAS CONDUCTED.

Each of the one hundred eighteen samples was planted in four places, twice on the County Farm near Metamora and twice on the Frank Hock farm east of Benson. The corn was planted by hand so as to get the same stand. In 1919 three kernels were planted in each hill. The plots used were four rows wide and fifteen long. Every other plot was planted with

one lot of seed so that each of the test samples was planted between two plots of the same kind of corn.

HARVESTING THE CORN.

The corn was husked the latter part of October. As the corn from each plot was weighed, the ears were divided into two grades, one of good corn and one of small nubbins, mouldy ears, and badly smutted ears. The corn in each case was weighed separately.

In 1919, twenty representative ears from each man's corn were saved at the County Farm and twenty others at the Hock farm. These samples were tied up with twine, weighed, and hung up in the Farm Bureau Office to dry. When dry, they were weighed and shelled, the shelled corn weighed, and a sample of the shelled corn sent to the Crop Production Department of the University of Illinois, where a moisture test was made.

CONTINUING THE TEST IN 1920 AND 1921.

In 1920, the same one hundred eighteen men who had seed in the 1919 test each brought in another bushel of eighty ears of the same kind of corn as that furnished in 1919. In most cases, the 1920 bushel was selected from seed grown from the selected ears of the 1919 bushel, but in all cases it was of the same kind of corn. Two additional samples were included in 1920, making one hundred twenty lots.

In 1921, one hundred seventeen bushels were brought in by the same men who had seed in the 1919 and 1920 tests. All three of the men whose corn was dropped had quit farming and their seed was no longer obtainable.

The test was conducted in almost the same manner in 1920 and 1921 as in 1919. The differences were as follows: Each man brought in only eighty ears, and no sorting out of the ear corn was done. Six kernels from each ear were tested for germination and disease instead of ten as used the first year. In 1921, the germination and disease test was made under supervision of J. R. Holbert, corn disease specialist of the U. S. Department of Agriculture.

In 1920 and 1921, the seed was planted with four kernels per hill, and the corn thinned to two stalks per hill in the first and third rows and to three stalks per hill in the second and fourth rows of each plot. The thinning was done when the corn was about a foot tall.

In 1920 and 1921, twenty representative ears for the moisture and shelling test were saved from each of the four plots where each lot of seed was planted, instead of from only one plot on each farm as was done in 1919.

The corn was planted on the F. M. Hock farm east of Benson all three years. It was planted on the County Farm in 1919 and 1920, and on the C. M. Smith farm instead of the County Farm in 1921.

INFORMATION SECURED REGARDING EACH SAMPLE.

Bushels per Acre. The yields as published are of dry shelled corn. By means of the moisture and selling tests, the yields of each sample were based on the yield of shelled corn after it had dried out so as to contain fifteen per cent moisture.

Per cent of Moisture. The moisture content of each sample at cribbing time was determined.

Per cent of Good Corn. The proportion by weight of the ear corn which was sound, marketable corn at husking time was determined for that grown from each sample each year.

Per cent of Shelled Corn. The shelling percentage of the crop raised from each sample was determined each year.

INTERESTING SUMMARIES

The following table shows some interesting summaries and comparisons.

	Bushels per Acre.	Per cent Moisture.	Per cent Good Corn.	Per cent Shelled Corn.
Average of 120 samples.....	71.5	21.4	89.7	85.7
Average of highest sample.....	78.1	20.3	89.7	86.3
Average of lowest sample.....	61.0	23.6	86.1	85.3
Average of 12 high samples.....	75.5	20.7	89.7	86.1
Average of 12 low samples.....	67.4	21.9	86.1	85.5
Average of 12 with least moisture...	72.2	19.1	89.5	85.8
Average of 12 with most moisture...	69.9	23.6	88.7	85.4
Average of 12 with most good corn..	71.9	21.4	91.7	85.5
Average of 12 with least good corn..	69.3	22.5	87.2	85.7
Average of 12 with most shelled corn	72.6	21.1	89.6	86.8
Average of 12 with least shelled corn	69.8	21.5	89.8	84.8

Notice from the above table that the highest yielding sample produced 17.1 bushels per acre more than the lowest yielding lot. The twelve (10 per cent of all) highest yielding lots yielded eight bushels more than the twelve (10 per cent of all) low yielding lots and *four bushels more* than the average of all 120 lots.

The high yielding corn was earlier maturing than the lower yielding lots as indicated by the lower moisture content at husking time.

SELECTING SAMPLES FOR SEED PLOT OR FOR EXHIBIT.

The following plan of picking out a sample of corn has proved the most satisfactory of any which I have ever followed. To begin, the ears should be laid out on a long board or table about fifty or one hundred ears at a time, with the butts of the ears all pointed one way and even with the edge of the table or board.

HEAVY, SOLID EARS.

Pick up each ear, feel the weight of it, and twist it. Discard every ear which is not heavy and solid. Nothing else should be considered while going over the corn the first time, and every ear thrown out which is apparently light or the kernels of which are loose on the cob, regardless of how nice looking the ear is in other ways. I consider this the most important measure of good seed corn, and while handling ears to learn whether they are heavy and solid, any ear which is particularly different from the rest in size or shape or in the size and shape of the kernels should be discarded. While uniformity is not absolutely essential to profitable seed, it is highly desirable and should be required in samples for exhibit.

I do not consider this matter of getting rid of irregularly shaped ears and kernels next in importance to getting rid of light and loose ears, but while the ears are being handled before the kernels are removed is the logical time to get rid of a lot of ears which would not possibly be selected for a sample for exhibit or for a seed plot.

BRIGHT, WELL-DEVELOPED KERNELS.

Two grains should be removed from the same row side by side and laid in front of the ear, one with the back side up and one with the germ side up. This should be done only from those ears which have been selected as the specially heavy, solid, fairly uniform ears.

At this time select only those ears whose kernels are fully developed. This means those that are bright and clean from the crown to the tip without any indication of starchiness except for a little way at the crown of the kernel, where the starchiness naturally appears on all dent corn. The backs of kernels should have the appearance which most farmers describe as oily.

All those ears whose kernels are slightly shrunken at or near the tip and show the white, starchy appearance running down over the kernel should be discarded.

UNIFORMITY OF EARS AND KERNELS.

The ten ears of the exhibit should be as nearly the same size and shape and the kernels should be as nearly of the same size and shape as it is possible to get them. I would rather have a sample made up of ears whose kernels are of the same size and shape but with the ears somewhat irregular than to have a sample whose ears are of the same size and shape but with kernels of varying sizes and shapes. I would rather have the ears and kernels both somewhat uneven in size and shape and have all heavy solid ears with perfectly developed kernels than to have them of just the same size and shape with some light or poorly developed kernels among them.

MINOR CHARACTERISTICS.

Of course, one should pay some attention to having tips of ears fairly well covered, rows of kernels straight, and a uniform color running through the ears of the exhibit, but these things are of minor importance and should be looked at only after the above characteristics are carefully considered.

I have come to feel that an old blind man in eastern Iowa was right in what he told me about sixteen years ago when I was judging corn in a corn show there. I had found I was giving a prize to a blind man. I asked him how it happened that he could grow such corn even though he was blind. He went over to the table where the corn was and I remember so well how he picked up those ears, tossed them from one hand to the other, felt them, twisted them, and he said, "Well, Mr. Mosher, I have learned through these years that the most important thing is not what you see about the corn, but it is to get the ears that are heavy and solid." Coming from a blind man, the idea was impressed very strongly on my mind, and I have been noticing it ever since, and that is the first test that I put the corn through.

Q. Do you judge of the weights in a comparative way?

Mr. MOSHER: It is the comparative weight, the weight of the ear for its size.

Q. In regard to this seed which received the prize in the state of Iowa, isn't there a possibility that it was of rough type and the farmers' seed of a medium type? I mean whether that hasn't some bearing on the difference in yield.

Mr. MOSHER: You think it was not necessarily because the corn had been moved from one place to another but because the really best corn had not been winning the prizes? Very likely there is something to that, yes, sir, but how much of it was that and how much of it was a matter of moving the corn that should not be moved I don't know.

PRESIDENT MANN: The inference of your question then is the highest winning corn did not go to the show.

Q. That is it.

Mr. MOSHER: Possibly this will help to answer your question. In this test in Woodford County which we carried on just as carefully as we knew how, we had in that test men who had been winning in our state and national corn shows, we had in that test nearly all of the men who had been showing corn and winning in the county shows, and of the ten outstandingly, high-yielding, good quality lots of corn not a single one had ever won a prize even in the county show. The high-yielding corn was all from men who had been working quietly along at home, along their own ideas, without having shown their corn at the corn shows.

Q. Hadn't they better cut out the show then?

Mr. MOSHER: No, sir, not by any means would I cut out the show, but I would make a careful study of a lot of this work that is being done in this state and other states and bring the type of corn that wins the prize to conform to the type that is giving our highest yield and the best quality when we plant it in the field.

Q. What was wrong with the show corn?

Mr. MOSHER: Why did the show corn and winning corn yield less than the other corn?

Q. Yes.

Mr. MOSHER: It was not the best type of corn for our conditions.

Q. Would you say that the rules governing in the corn show need modification?

Mr. MOSHER: They are being modified rather rapidly. I think they should be modified.

In summing up, an ear that is heavy and solid, an ear that has grains that are plump and bright clear down to the cob, an ear that has grains that are wide rather than narrow, an ear that has grains that are thick rather than thin, an ear with grains that are medium in length rather than long or short, an ear that is medium in size around but plenty long,—those are the things that should be taken into consideration.

And so again, as I leave the platform, I repeat; those ears that are most likely to be found in the high yielding corn and are not often found in the low yielding corn are the ears that are heavy and solid, the ears with grains that are plump and bright to the cob, ears with grains that are wide, thick, medium in length. Those things are things that I consider of primary importance.

Then if on top of that you have carefully selected the ears in the fall from stalks that are free from disease, from stalks where the ears were in the right position, then in addition to this selection in the spring will make that careful germination test and get rid of those that are diseased, I believe you will have gone a long ways towards getting the very best.

As I said before, the very highest yielding corn in this test was from men who had no realization of the fact that they had especially good corn. They were men who had not attended farmers' institutes, or college, or short course schools, who did not read much. Some had learned from their grandfathers how to select the seed and had kept the same seed in the family throughout the last forty years. I believe there are a few men like that in every county who know more about how to select seed corn which will grow a larger yield of good quality corn than any of us know. The thing that we should do here in the Corn Belt is to ferret those men out through our Farm Bureaus and Crop Improvement Associations and make use of that intuitive knowledge that has led them to go so far in advance of the rest of us. I thank you.

PRESIDENT MANN: I think it is mighty fortunate that there have been men who have been willing to go into the science of breeding and applying it to agriculture. Now there is a pound ear of corn which probably was produced on a stalk weighing a pound. That stalk which weighed a pound made ninety-seven per cent of its weight after the middle of July, or after that ear started. For plants to do that they must be strong and free from disease.

Agriculture is fortunate in this state in having men who can apply the real science of breeding to these ordinary crops, and the man who stands at the head of this valuable work, perhaps, in the actual demonstration, is Jim Holbert, of the Funk Seed Corn Corporation, in Bloomington. We want

to take our hats off to Mr. Holbert, because he is doing for agriculture what scientists are trying to do for animals and other things. It ought to be Dr. Holbert, but for short we call him Jimmy Holbert.

The human race has been doing much with corn, but it is only during the last few years that we are learning how to breed it. I don't presume that there is a grain plant that grows anywhere that has the capacity to perform its functions as well as the corn plant. Many of the other grains are doing better. Wheat is doing better. It is a more efficient plant today than corn, but the possibility of corn exceeds wheat very considerably. Of course, corn is a little disgraced now perhaps because of its price, but don't let that worry you. It won't be long before they will be asking the American farmer to get busy and produce corn and other things more abundantly than we ever have before. This breakdown of the world's machinery of banking and transportation will soon be remedied and then they will want our corn and the other products of our soils.

Q. How many days will it take corn to mature in Lake county? That is about 150 miles north of Champaign county.

PRESIDENT MANN: So far as the question of latitude is concerned there would not be much difference, but so far as the temperature changes are concerned there might be considerable, and it would be dependent on those temperature changes. Nobody can tell you in advance what those will be in any one season.

I say it again it ought to be Dr. Holbert, but we will call him Jimmie for short.

CORN DISEASES AND CORN BREEDING.

(*James R. Holbert.)

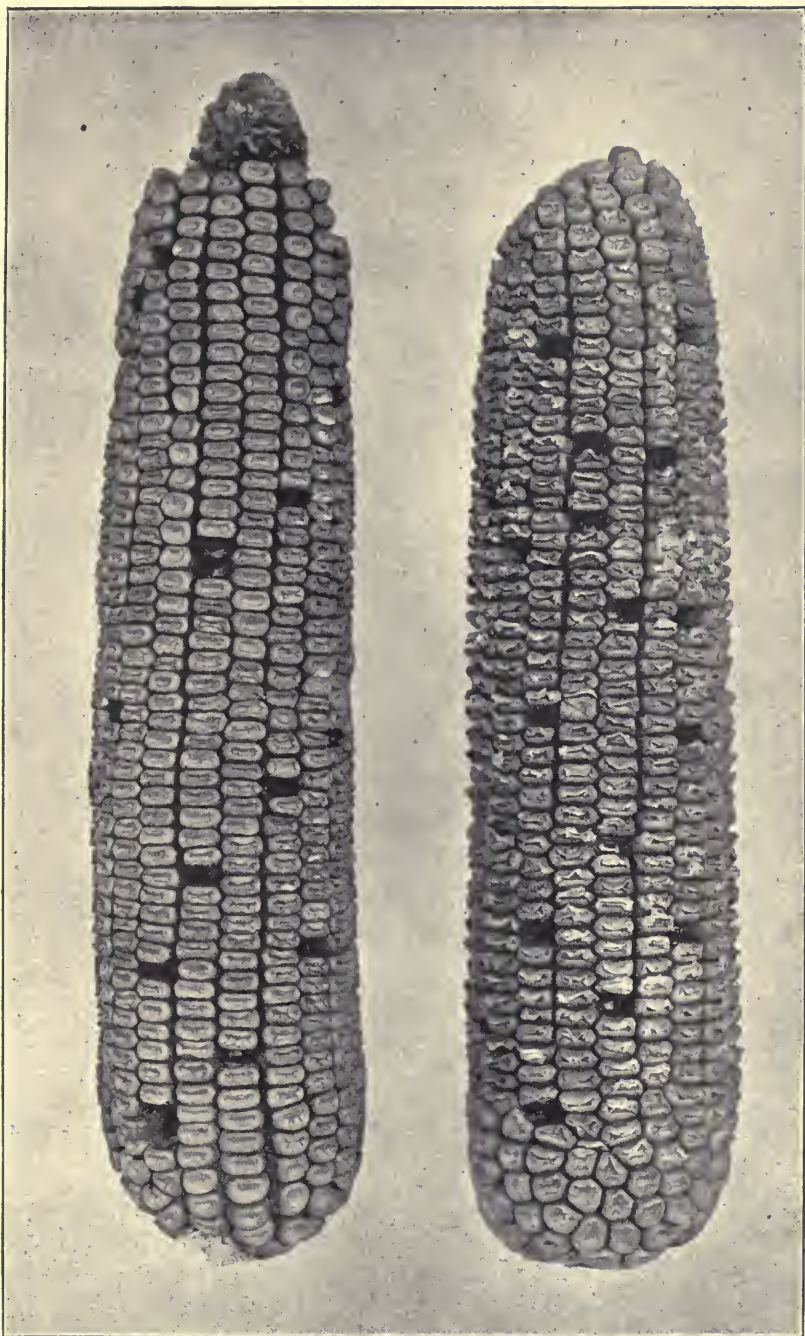
MR. CHAIRMAN, LADIES AND GENTLEMEN: Before we start a brief discussion of some of the genetic phases of this corn work I would like to review the other phases that have been mentioned before.

One of the most important periods in the life of a corn plant is the germination stage, i. e., the first two or three weeks following planting. This is especially true where the corn has grown from infected seed, or seed susceptible to the root and stalk rots. Nearly disease-free and vigorous germinating seed is influenced less by unfavorable soil temperature and soil moisture conditions during this early period of growth, and, as a result, can be planted earlier with safety.

One of the first symptoms of the corn root and stalk diseases is the reduction in stand and the reduction in vigor. We have just recently summarized four years' experiments on this phase of the work and the results will be published in due time in the Journal of Agricultural Research issued by the United States Department of Agriculture. The results reported in this discussion have been secured by investigations conducted cooperatively by the United States Department of Agriculture, Funk Bros. Seed Company, and the Illinois Agricultural Experiment Station.

We have here a group of plants grown from seed planted at the same time in the same soil and photographed at the same time. This one (indicating) is grown from disease-free seed and the others from badly infected seed. Usually such plants die within a few days after emerging. In many

* Note: (Mr. Holbert used slides exclusively).



Experimental evidence favors the type illustrated by the ear on the left.
(Farmers' Bulletin 1176.)



James R. Holbert

fields this results in a fifteen to twenty percent reduction in stand during the first two or three weeks.

The next slide shows again a strong, vigorous corn plant grown from disease-free seed. These others (indicating) grew from slightly infected seed.

Q. How long will they live?

Prof. HOLBERT: They would probably live throughout the season. The difference between these plants—so noticeable now—may disappear somewhat in a few weeks, perhaps by the middle of July, so that these may look apparently equal. *But we find that plants stunted in their early stages of growth never recover sufficiently to produce a normal yield of corn. They are usually nubbin bearers or barren, or in case they do produce an ear, it is frequently of poor quality.*

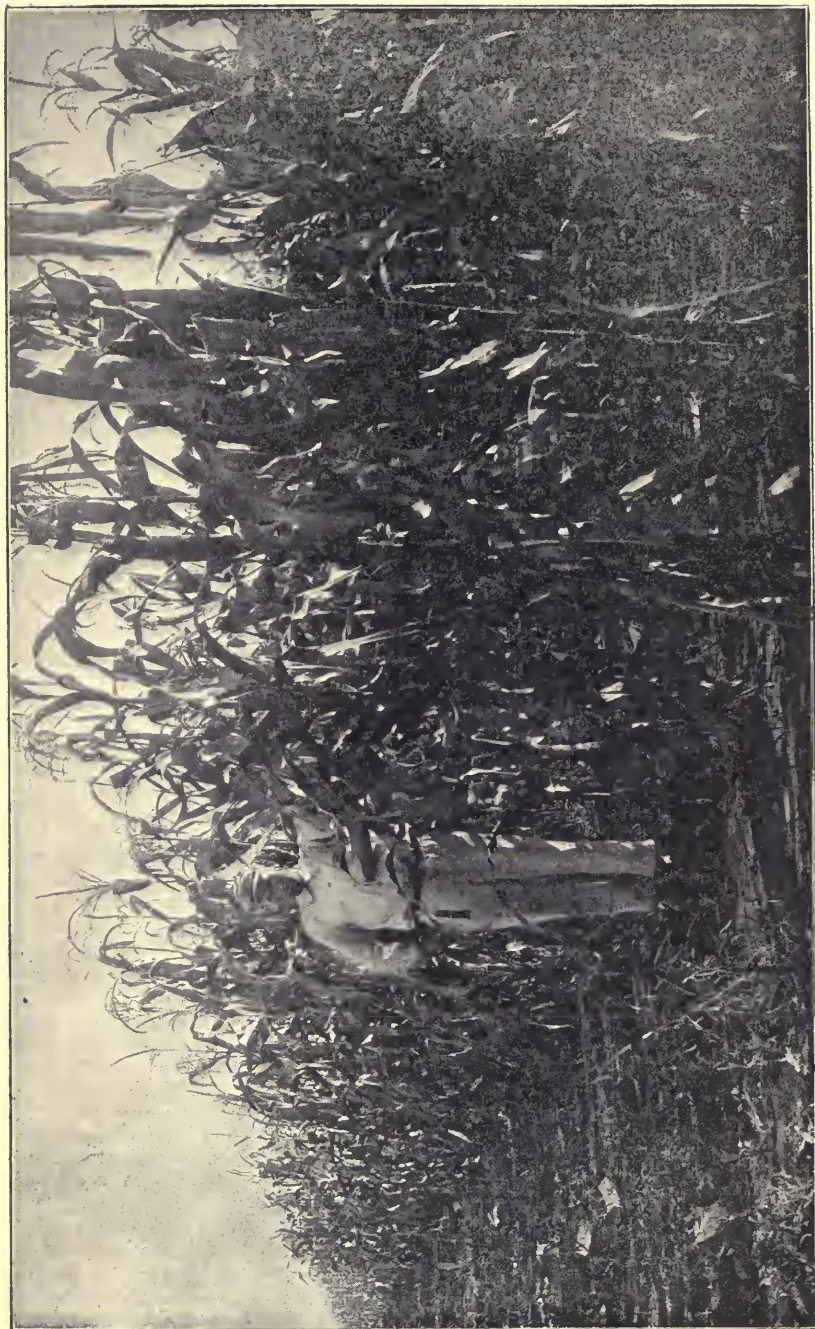
This slide (indicating) shows the same thing from a different standpoint. In this case we have taken two seedlings from the germinator, one a clean healthy, vigorous seedling, which is represented by the solid line, and the other a badly diseased seedling, represented by the broken line. They were the same height when they were transplanted. From the

graph you will note that the diseased plant spent about a week or ten days in sending out a new set of roots so that it could gather nutrient from the soil. After that time it grew at a parallel rate with the disease-free, and finally obtained the same circumference at the base but was not quite as high. The difference in yield is well illustrated by the photograph of the good-sized ear from the healthy plant and the nubbin from the plant grown from infected seed.

Here (indicating) we have the same thing again in the field. These two were planted in adjacent hills, one from badly infected seed and the other from clean healthy seed. Note the difference in vigor. The next slide will show the same plants at harvest time. The plants are practically equal in height. The one has two nubbins, the other has three good sized ears.

The next slide shows the same thing carried over to larger plats. Poorly selected seed usually contains a large amount of infected seed. Fields of corn grown from such seed have many missing hills, a poor field stand, and many weak plants. These two plats were planted with the same man's corn at the same time, no difference in the soil treatment. Note the irregularity in growth, some plants waist high, other shoulder high, and some only knee high. The difference in total yield was not so marked. However, the plat planted with nearly disease-free seed gave an increase of twenty-five bushels of sound, marketable corn.

During the past two years we have been studying the influence of time of planting, soil temperature, soil moisture, and other factors with relation to the development of the different corn root and stalk rot diseases. This graph represents the data secured from just one of these experiments. The solid line indicates the portion of the corn planted that produced strong, healthy plants in the case of nearly disease-free seed. This is the first planting (indicating) May 7th; the second, May 14th; the third, May 21st; and the fourth, May 30th. Time of planting had little effect on the stand and vigor of corn grown from good seed. But in the case of the diseased seed the percentage of strong plants dropped in the first planting. But in the last planting—when all conditions were very favorable—the diseased seed produced a large percentage of strong plants. However, those strong plants



A very promising homozygous strain of corn.

were not able to produce a good yield of corn even if they did start off well, as the next slide will illustrate.

The black represents the percentage increase of strong plants due to the use of clean, vigorous seed—about fifty-five per cent in the first planting, the same the second and third. In the last planting, owing to the warm, moist weather condition during August and September (which was responsible for so much of the ear rots this year) you will note that the corn grown from the infected seed did not mature and was much more susceptible to ear rots. As a result the corn grown from good seed gave an increase of 79.8 per cent of sound corn.

This graph emphasizes the same thing. It shows the reduction in percentage of sound ears in the last planting of corn grown from infected seed. *Corn grown from disease-free seed (indicating) is not nearly so susceptible to changes in environment. On the other hand corn grown from diseased seed is very susceptible to unfavorable conditions.*

The disease-free (indicating on the next slide) has about the same amount of rotten corn for the different times of planting, but notice the influence of time of planting on the amount of rotten corn where diseased seed was used. In the first planting there is thirty per cent rotten corn; in the second, thirty-four; and in the third, fifty. Dr. Hottes will emphasize the importance of some of the physiologic factors about which I have hinted.

During the display of the following slides I would like to emphasize some of the important genetic factors about which Mr. Mann spoke. The ordinary commercial field of corn is a mixture—a conglomeration, if you please—of a great number of types, some of which are desirable, but most of which are undesirable. I don't know how to explain this situation to you better than by giving an analogy in livestock. If two breeds of hogs, for instance the Duroc-Jerseys and Poland-Chinas were turned into the woods and allowed to breed for a few years, after which Chester-Whites, Hampshires, and all the other swine breeds were included, there would be a thorough mixture after a few years. A somewhat similar condition exists in the average commercial corn field which contains literally hundreds of different types. When these different types are separated we find that they have distinct individualities. Some of the types, on account of an inherently weak or inefficient root system, always wilt the first hot day in July. Such a condition is inherited from year to year. It is something with which every farmer is familiar. Many farmers call them (indicating) the "white flags" as they go along the roads in August.

Frequently, the inherent weakness of the corn is more responsible than the dry weather for the resulting injury to the crop. *We need corn that will not be affected by every unfavorable weather condition that obtains.*

Another bad feature about some of these different types is their inability to stand up (indicating). You can always be sure to find the plants flat on the ground after the first rain and wind storm. Here (indicating) is a plat grown from another pure (homozygous) strain, planted side by side with this one (indicating)—only two rows away—planted the same time, no difference in soil treatment, wind and rain. You note that it is standing up absolutely straight while the other is leaning badly. This has happened consistently for the last four years.

This (indicating) is an inbred strain we found to be comparatively resistant to the different root and stalk rot diseases with practically no smut or rust. The leaves are deep green in color and free from spottings and streakings. It has a very strong and efficient root system. When two particular strains of this character are combined we get what you see here (indicating).

In this case (indicating) we have two very undesirable characters combined. When this corn first came up there was a full stand until the plants attained a height of six inches. Gradually, however, many of the plants began to wilt and die off. Later they fell over.



The ear on the left is disease-free. Note the sound condition of the shank attachment and the horniness of the kernels. The ear on the right came from a badly rotted shank. Note the rotted condition of the shank attachment and the starchiness of the kernels.

The same thing here (indicating the next slide). In that plat (indicating) there is a yield of about seventy while here (pointing to a plat grown from the F_1 seed of two good homozygous strains) is a yield of about one hundred ten bushels. The average in the best open fertilized seed was about seventy-five bushels.

There (indicating on next slide) is one of those homozygous strains that has proven so superior over a period of four years. On the opposite side may be seen another unusually good one that is entirely unrelated. When these are combined the result is very satisfactory, as may be judged by the plat in the middle—practically every grain of corn that was planted produced a stalk with an ear on it like that (indicating).



A very susceptible strain of corn grown adjacent to a comparatively resistant strain.

This is one of the most gratifying things that has developed in these investigations. When this project is finally completed, as a result of the cooperation that has been so effective heretofore, the improved strains of corn will mean to Illinois farmers exactly what Kanred wheat means to the wheat farmers of Kansas. We fully believe, and I think we are well justi-

fled in so believing, that we shall develop eventually a corn that will be practically resistant to these different diseases.

This shows another view of the ears of these two most promising homozygous strains and their first generation cross. When we consider the fact that practically ninety-five per cent of the plants produce ears like that (indicating) with three plants per hill, you can readily see where the 110-115 bushels come from.

PRESIDENT MANN: Is that field weight or dry weight?

Prof. HOLBERT: Field weight would put it up to about 125.

Q. What do you call that corn?

Prof. HOLBERT: We haven't named it yet.

Q. Do you have to combine that corn every year?

Prof. HOLBERT: The eventual solution probably will be the combining of eight good homozygous strains into a recreated, and greatly improved variety. Perhaps in ten years from now the terms that I have been using today will be very familiar to you, and some of the methods which I have described in the last few slides shall have been adopted generally. It looks as though that was "the only way out" eventually. We have only begun the permanent improvement of the great corn crop; we have just nibbled on the surface of the matter of corn breeding, but we have nibbled enough to know that we can get somewhere if we follow the right road.

PRESIDENT MANN: Do the nibbling while the nibbling is good.

Prof. HOLBERT: Yes, sir. In the meanwhile the data which we have obtained during the last five years has fully justified us in a few very definite recommendations;—*one of which is the profitableness of field selection of well matured ears from stalks that are healthy and ripening normally.* That is, we want to avoid selecting such prematurely dead ears (indicating) from stalks that have dried up on account of a rotted condition of the roots and stalk. During the last few years those two facts have been well established.

We know now that we not only have to consider the matter of infection and freedom from infection but also the matter of resistance and susceptibility. In other words disease-free seed may be very susceptible. Disease-free seed of a very susceptible selection or variety may just be as unsatisfactory from the standpoint of production as diseased seed of a less susceptible variety.

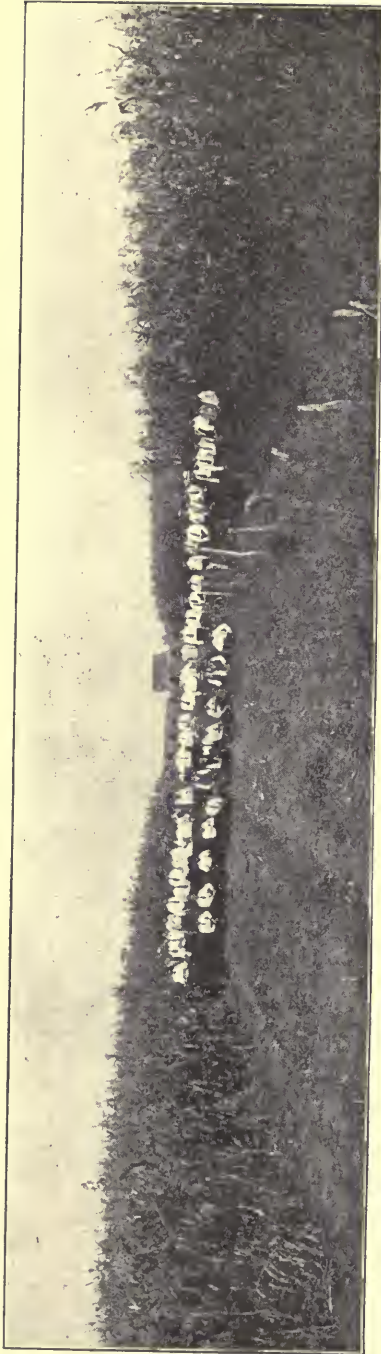
PRESIDENT MANN: That is unless it is badly diseased.

Prof. HOLBERT: Yes, unless it is very badly diseased. That emphasizes two very important things. One is a good field selection and the other is the point which Mr. Mosher has mentioned, that is the selection of a type which we have found to be associated more or less with resistance. The selection of the type is next followed by the third point which Mr. Mosher mentioned, namely the germination of the seed corn. I will not dwell on this point for it has been emphasized previously. But I do want to emphasize it again so that you may know we still believe in it and practice it.

Here is shown some samples from the germinator. This is a disease-free seedling (indicating). You will note the vigorous root development and the clean, healthy condition of the interior of the "embryo portion." On the opposite side of the screen is a diseased seedling (indicating the rotted condition of the seedling). That may or may not indicate infection, but as far as we know it practically always indicates susceptibility.

Another very important factor to consider in the reading of the germinator is the matter of vigor. There are two seedlings, both of which are disease-free. However, one is vigorous while the other is badly lacking in this respect. Many times the difference in yield between the corn grown from these two types of seedlings would average from thirty to fifty percent. This (pointing to the vigorous one) is the type towards which we must select.

During the last six years we have been using these three recommendations; namely, FIELD SELECTION, PHYSICAL SELECTION, and GERM-



One of the many visiting delegations of farmers that have studied the experiments conducted by the United States Department of Agriculture on the farm of Mr. E. D. Funk, Shirley, Ill. The field on the right is in corn for the first time, previously it has been in virgin prairie sod.

INATOR SELECTION, with very satisfactory results. This (indicating) shows a field grown from seed that has been selected and prepared in that way for four years. We feel confident that you will all be well repaid by following these recommendations. Meanwhile, we hope you will go home and consider a few of the salient features about corn breeding about which I spoke.

I thank you. [Applause.]

PRESIDENT MANN: One of the hard things in human life is to get rid of the carbon dioxide, and it's a hard thing for plants to get rid of it fast enough. They say if you hold your breath long enough the carbon-dioxide will change to alcohol in your blood and cause intoxication. This same carbon-dioxide as it floats in the air comes in contact with some of the corn leaves, mixes up and makes sugar. If you haven't learned anything else, I think you will begin to learn something about the complexities of corn plants.

Agriculture has another thing to congratulate itself on in this state, and that is that the University trustees have given to agriculture a man who is the most efficient, perhaps, in the world, and turned him over to agriculture, to study these plants for us. We don't know much about plants; we don't know much about their construction; we don't know much about their habits and their idiosyncrasies. We are just beginning to learn something about them. That man the University turned over to agriculture is Dr. Hottes. He is going to do wonderful things for agriculture in the next few years, and perhaps less. Dr. Hottes will now address you.

PHYSIOLOGY OF GERMINATION.

(Dr. Chas. F. Hottes.)

MR. PRESIDENT AND FRIENDS: Agronomists, botanists and geneticists have by no means been inactive. They have used the same fundamental bases for their studies that you today have considered, and yet the results of approximately sixty years of their labor gives to us little upon which we can build. The reason for this is apparent, especially after the brief discussion that I shall be able to give to you this afternoon. In the first place, instead of setting as the goal the corn plant, they have worked and thought only of the individual fields of agronomy, botany and genetics. We have a common interest, and having a common interest we must work together. We must work shoulder to shoulder to achieve a common end. The materials that we have are simply



Dr. Chas. F. Hottes.

crude blocks with which to build. As yet we cannot construct the structure, for the simple reason that we have not the fundamental plan that shall guide us in its construction. Many of the blocks are missing; many of the blocks have never been constructed, and it should be our duty to work together now with the hope and the endeavor of achieving results that are definitely correlated and usable.

The plant is a most effective machine. It does that which Mr. Mann has repeatedly referred to today—it abstracts from the atmosphere the gases, it abstracts from the soil the water and the mineral—nutriments and materials that are absolutely different from those that course through its own body, or those that course through our bodies, which are after all, the same as those that course through the plant bodies. They are entirely different, as I say, and yet their origin is from nature itself, from physical nature. It is the green plant, and the green plant only, that is capable of utilizing the materials of air and of soil and by means of the energy of the sun convert these materials into those organic compounds that you and I consume as food, and that every plant consumes as food.

In our construction of the plant we must consider it from two points of view. These have oftentimes—in fact, too often—been considered from separate points of view and kept apart. We must consider them as united, simply as two different parts of the same plant, working in perfect co-ordination and working towards a common end.

The life cycle of a plant presents to us two widely different, though definitely correlated phases; namely, nutrition and reproduction. The former largely deals with the vegetative processes—food production, and has as its chief purpose the maintenance of the individual. The latter deals with the reproductive processes—seed production, and has as its chief purpose the perpetuation of the race through generation. In our seed studies we have too long considered nutrition and reproduction as separate subjects, and the voluminous and important literature in these respective fields has failed to furnish us with the information we most need. The investigations have proceeded without unity of purpose, and, consequently, lack co-ordination and usefulness in application. We have had the stones for an imposing structure cut and delivered, but they have come from many sources and the artisans that cut them have been unmindful of the details of the structure as a whole or of the interdependence of its parts.

GERMINATION TEST NOT SUFFICIENT.

We should no longer feel content with a simple viability test. Percent of germination is not necessarily a measure of fitness of the seed for field

purposes. The Illinois utility score card recognizes that, and the Illinois farmers have proven it by extensive tests. In the choice of seed we must direct our attention to its genetic constitution and its physiological conditions during the period of its development, its dormancy, and its several phases in the germinative process. The influence of nutrition, of water, and

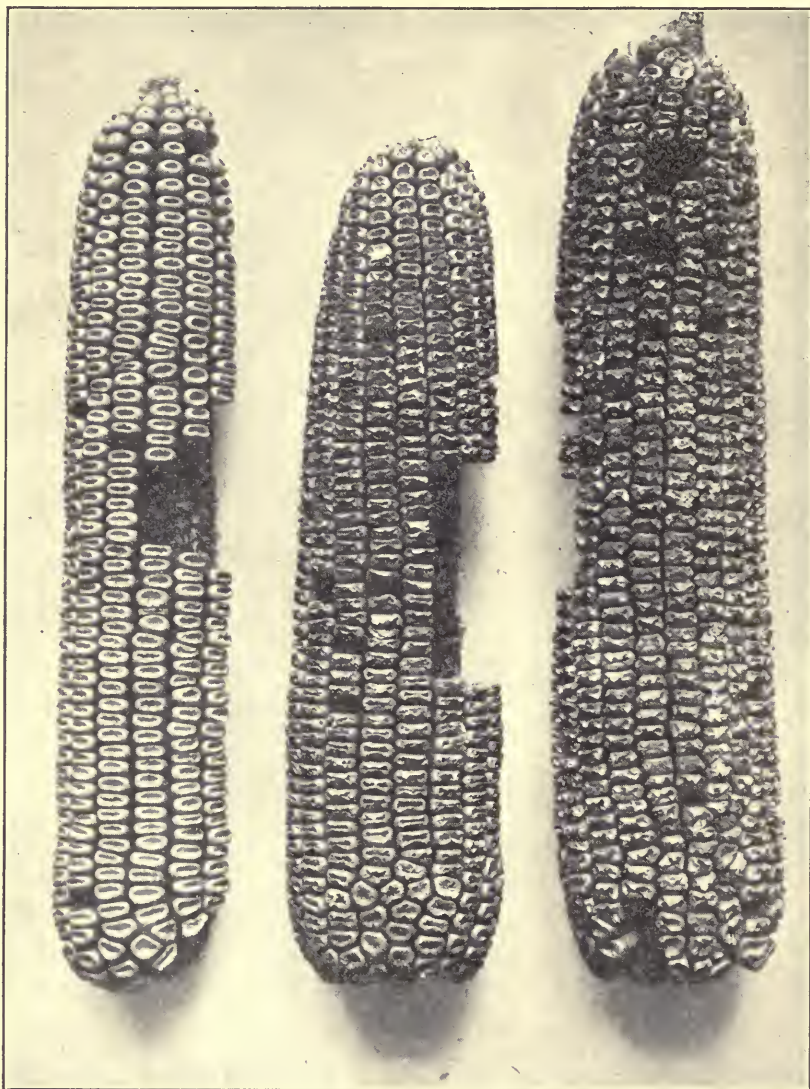


FIG. I.—Types of smooth, medium rough, and rough corn. Kernels from these ears are shown in Figure II, A, B and C, respectively.

of the physical agents, as temperature, etc., profoundly affect the delicate organization and predetermine in large measure the nature of the crop and the yield.

In recent years we have paid considerable attention to experimental breeding of our seed crops, and it is right that we should. On the other

hand, we must not lose sight of the external factors of soil heterogeneity, water and temperature variations and extremes, light, etc., which affect by increased or diminished nutrition the inherent tendencies of the plant. The high oil and high protein corn strains, so carefully selected and maintained by the Illinois Agricultural Experiment Station, show marked seasonal changes, plus and minus, due to the effect of the environment at the susceptible period of development, modifying or conditioning the hereditary determiners. This becomes all the more clear when we fully realize the complicated structure and remarkable adaptive powers of the living substance.

The green plant is built up of innumerable cells grouped into tissues and organs for the performance of specific functions. Each cell consists of a bit of differentiated protoplasm, which, with Huxley, we may call the "physical basis of life." It is that substance alone that through distinctive functional processes nourishes itself, respire, moves and grows, adjusts itself in a definite manner to stimuli from the external world and, finally, maintains the uninterrupted succession of life through generation. It cannot take its origin from the physical world, but is increased in quantity and reproduced through properties it alone possesses. We may follow it in continuity from grandparent to parent, to offspring. It carries potentially the hereditary factors that a long line of descent has given it, and these are activated or inhabited by the internal conditions prevailing at a given stage of development or by the environment acting upon its delicately organized substance. A continuous cycle of chemical and physical interactions are constantly taking place between the living cells and the physical world. Without cease certain substances—carbon, hydrogen, oxygen, magnesium, nitrogen, iron, etc.—totally different from its own body, enter the organism and, in an endless round of cellular chemical activity lose their identity. They pass through a series of chemical combinations of increasing complexity, and finally may appear as part of the living substance. But the organic substances produced, the protoplasm itself, are unstable. They are constantly being broken down with a liberation of energy and the waste products return to inorganic nature. The living substance of our growing crops is in such a state of incessant change, a constant transformation and transfer of energy is going on, it is in statical equilibrium only when it is dead. "As no man," says Huxley, "fording a swift stream can dip his foot twice into the same water, so no man can with exactness affirm of anything in the sensible world that it is. As he utters the words—nay, as he thinks them, the predicate ceases to be applicable; the present has become the past; the 'is' should be 'was.' And the more we learn of the nature of things, the more evident is it that what we call rest is only unperceived activity; that seeming peace is silent but strenuous battle. In every part, at every moment, the state of the cosmos is the expression of a transitory adjustment of contending forces; a scene of strife, in which all the combatants fall in turn."

SOIL AND CLIMATE INFLUENCE.

With an organization so delicately adjusted and so responsive to external conditions, it is apparent that differences in soil and climate will modify the vegetative or nutritive functions and through them decrease the yield and change the nature of the progeny.

This progeny, the seed, is in corn or wheat composed of embryo and endosperm. The embryo results from the union of two cells, male and female, brought together through pollination and fertilization. By this union the two bits of protoplasm from different parents and, hence of different ancestral history, will determine the genetic constitution of the embryo that at once begins to form through increase in the number of cells by division. Development proceeds to a definite stage and stops. The seed passes through the phases of ripening and remains dormant until favorable conditions for growth are given it.

The endosperm results from the union of three cells, two of maternal and one of paternal origin. The single cell thus formed divides and forms the storage tissue which surrounds to greater or less degree the embryo. The cells comprising the endosperm are filled with sugar, oil, starch, proteins,

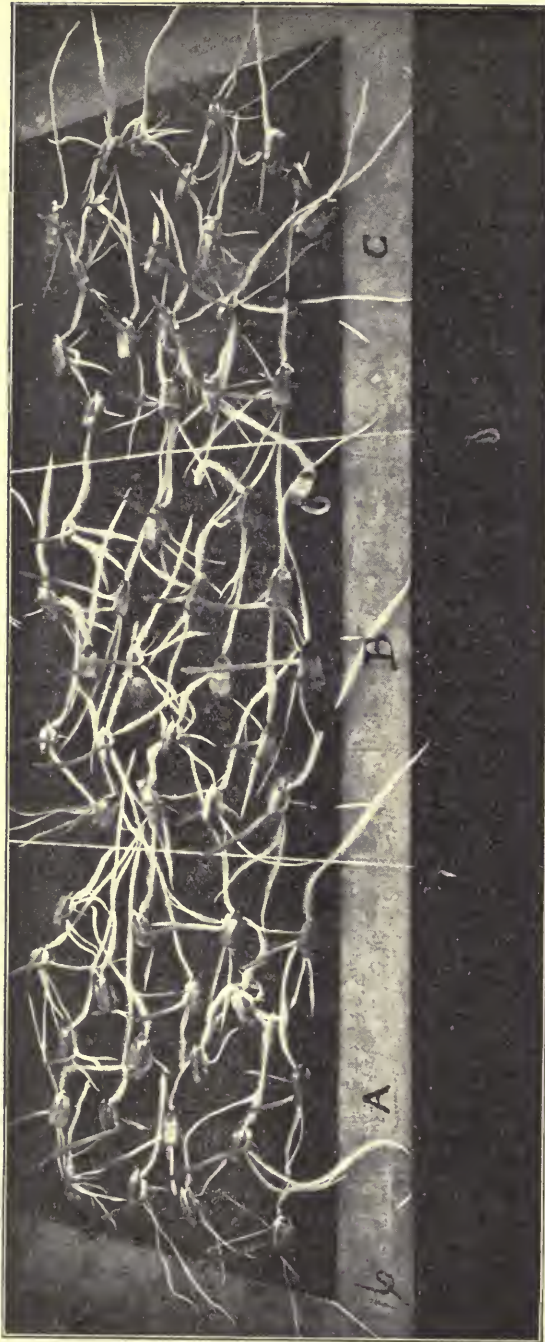


FIG. II.—Kernels of smooth, medium rough, and rough, sprayed with penicillium spores and placed under favorable conditions for germination. Note the mycelium threads radiating from injuries to the tips of the kernels in "B" and "C."

etc., food products produced during the vegetative phase of the mother plant and now stored in proximity to the embryo for its use in the early stages of germination and growth. The amount and nature of the food present in the endosperm is dependent on a number of factors, such as the vigor of the mother plant, the water and soil nutrients available, temperature, etc. The amount of organic material produced by the mother plant and drawn from her by the developing embryo and endosperm is too well known by the farmer to need further discussion. The weight of his cereal crop is essentially the weight of the food supplied by her, or rather drawn from her. The relation of the developing embryo and endosperm to the mother plant is not without interest. The relation is one of host and parasite and results in a great weakening, or even the death of the plant through exhaustion. The latter is well illustrated by the century plant. Its vegetative phase extends over a period of ten to fifteen years. During this period the plant elaborates from the inorganic materials offered by its environment, the organic food materials which it stores in its fleshy leaves. These leaves in vigorous specimens may be six feet in length, nearly a foot in width, and four inches in thickness. They represent the stored materials of the whole vegetative period of the plant. When the reproductive period sets in, the bud in the center of the rosette grows into an enormous flower stalk four or more inches in diameter, twenty feet or more in height, and branching at the top. Hundreds of flowers develop, and seeds with organic material stored, mature. In marked contrast stand these two phases. In a few weeks the organic material slowly accumulated during ten or more years of vegetative life is rapidly consumed in the development of the flower stalk or completely withdrawn by the parasitic nature of the developing seeds.



FIG. III.—Germination of corn harvested in the milk stage and dried before testing.

The large fleshy leaves lie as shrunken leathery strips at the base of the stalk. The mother plant is dead. The blooming period of the nasturtium and pansy is prolonged by cutting the flowers, thus preventing the weakening of the plant through seed parasitism. All this is not without its lesson in modern field practice. The farmer no longer selects his seed corn from a plant that has not been able to survive the need of its progeny for organic materials. Such a plant is either constitutionally weak or diseased. Mature ears on a green stalk show vegetative strength and, usually, freedom from disease which presage embryo vigor and proper food reserve.

Embryo and endosperms are enveloped by the two seed coats to which, in our cereals, the wall of the ovary is added. These coats when intact offer an effective protection against mechanical injury and fungus attack. The organic materials of the endosperm furnish ideal foods for a number of the fungi causing severe injury or death to very young seedlings. Corn with distinctly chaffy indentation is especially prone to fungous attack. (Figures 1 and 2.) There are several reasons for this and the discrimination against this character in the Utility Score Card is, in my opinion, justifiable. Even in the case of some strains of corn where it is apparently an inherited character, it is objectionable for the reason that the coats are there very easily injured, resulting in fungous infection, with the consequent decrease in vigor to the germ or even early death. Kernels of this nature usually have a very starchy endosperm, the result of strain or inheritance, or because they are imperfectly matured. In either case they are more likely to fungus attack than are kernels with a larger quantity of horny endosperm. In this connection corn harvested in different stages of maturity; namely, milk, dent, and mature, shows interesting results. Soaked in water the amount of material leached increases from the mature, where it is very slight, to the milk stage, where it is very marked. On the germinator the sprouts of the mature corn are vigorous, the percent germinating high, and little or no fungus develops. In the milk stage the germination under similar conditions is more rapid—largely because of rapid water absorption—the sprouts are slender and weak, the percent germinating low, and fungus abundant. (Fig. III, IV, V.)

NEED AND FUNCTION OF WATER.

The living substance can manifest its properties and perform its functions only in the presence of water. This plays an important role in all vital activities and enters into the physical-chemical structure of the protoplasm. As the most universal solvent in nature, it carries to the cell the materials for elaboration and eliminates from the cell the products of destructive metabolism. It is the vehicle in which are carried the materials from the mother plant to the developing seed. The quantity of water present in a member of an organ roughly determines its state or phase of vital activity. In active life the quantity varies from 40 to 98 percent. In the air-dry seed, as you know from the tables used in the commercial grading of grain, it is much lower. In fact, it may be reduced in some seeds to 2 percent or lower without causing death, although not without injury. The rapid increase, by small quantities of water, in the vital activities as measured by the respiratory process is shown by the figures below:

Respiration of Haynes Bluestem wheat, incubated at 100°F. for four days. (After Bailey and Gurjar.)

Moisture Per Cent.	Carbon dioxide in milligrams respired in 24 hours for each 100 grams of dry matter.
12.50	0.54
13.93	0.65
14.78	0.86
15.42	1.62
16.08	2.88
16.65	6.86
17.07	11.72

Stored grain of relatively high water content still further increases the water present through the metabolic water from the respiratory process. This results in a lowering of vitality, fungous attack, and ultimately death. The losses incident to the transportation and storage of grain are avoidable

if our present system of grain grading is strictly followed. So, too, the vitality and vigor of our seeds can be preserved by careful attention to their water content.

The custom, still prevalent among our Indians of the southwest, of drying their seed corn on the pueblo roof before storing it, is scientifically correct. We are apt, however, under more modern conditions to carry the drying process too far. Grade one for storage purposes of commercial grain is unquestionably the best. Experiments in the laboratory and field have shown, however, that seed corn with a moisture content equivalent to grade one has suffered in vitality. The grades one to commercial planted in contiguous rows in the field show that a water content equivalent to grade three is the most favorable. In rate of growth, vigor of stalk, and yield it is superior to the others.

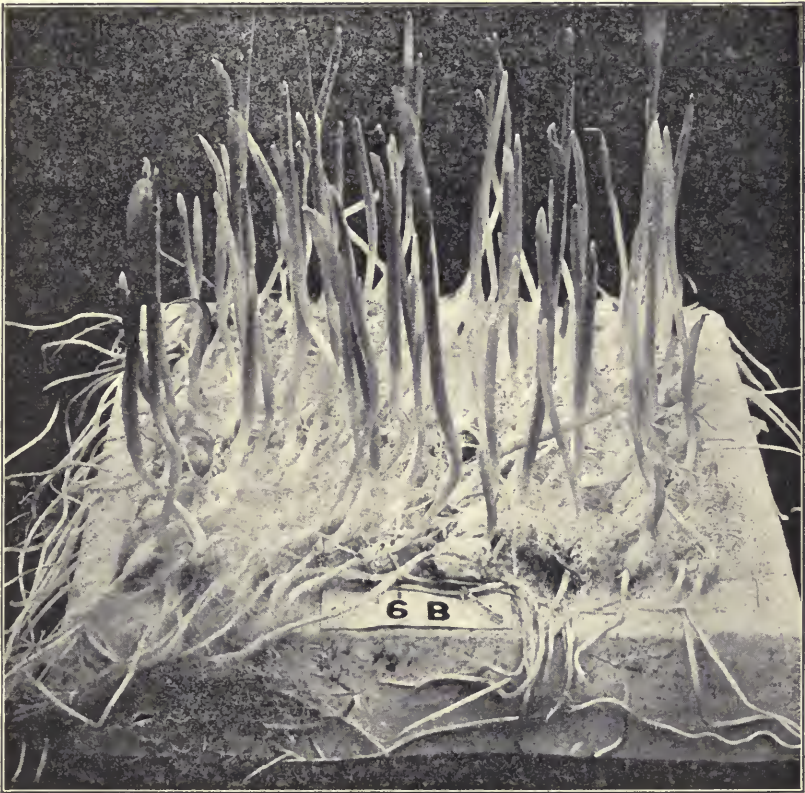


FIG. IV.—Germination of corn harvested in the Dent stage and dried before testing.

The quantity of water present in the protoplasm roughly determines the state or phase of vital activity, and markedly changes its resistance to high and low temperatures, and chemical agents. The knowledge of this relation is of inestimable value to man. It places in his hands one of the most effective means of destroying, or of saving life. The successful destruction of the germs of infectious diseases in our living rooms by fumigation requires careful attention to the water content of the air during fumigation. As it is ordinarily practiced, the effect of fumigation is largely a moral one. In the dry atmosphere of our modern homes the water content of the protoplasm

of micro-organisms is low and its vital activities greatly reduced. In this condition the resistance of the organism to chemical agents is extremely high. In the presence of atmospheric moisture the protoplasm rapidly absorbs water, its vital activity, as we have already noted, rapidly increases, and it becomes extremely sensitive to the destructive agent. In fumigation to destroy disease germs we must maintain a high humidity for effective destruction; conversely, in the fumigation of seed infested with insect life the water content of the seed must not be too high if we wish to preserve its germinative power.

HIGH TEMPERATURES KILL DISEASE.

Treatment of seed to high temperatures has recently been advocated for the killing of disease organisms that infest it. This treatment, if effective, depends on the difference in resistance of host and parasite to high temperatures. It is one, I am certain, in which the water relation must receive careful attention if the germinative power and seedling vigor is to be preserved. Waggoner in a series of careful experiments on radish seeds found that with an initial water content of 45 per cent and above, all seeds are killed at 140°F. If the water content of the seed be decreased before its subjection to the higher temperature, the per cent of germination is increased, that is, the death point is shifted higher. For example, a change in the water content of a sample from 45 to 30 per cent shifts the death point from 140°F to 149°F. Air-dry seeds of approximately four per cent water content, germinate normally after heating to 167°F for half an hour, and are killed between 204°F and 212°F. Seeds from similar samples carefully dried until only four-tenths of one per cent of water is present at the time of treatment, give a normal germination after treatment at 212°F, and are killed between 253.4 and 257°F. We find that as the water content increases from four-tenths of one per cent to 45 per cent the maximum temperature at which a normal per cent of germination takes place, drops from 212°F to below 122°F, and the lethal temperature falls from between 253.4-257°F to 122-140°F.

It is to be observed, however, that exposure to higher temperatures retards germination, and, in seeds of medium water content, affects the vigor of the seedling. The retardation in the germination of radish seed differing in water content when heated at 176° F. for thirty minutes, follows:

Water content of seeds when heated.		4%	9%	14%	18%	Check in treatment
Per cent germinating	1st day.....	6	0.6	0.	0.	30
Per cent germinating	2d day.....	21	5.4	0.	0.	45
Per cent germinating	3d day.....	35	17.0	7.4	0.	14
Per cent germinating	4th day.....	17	24.2	11.0	0.	3
Per cent germinating	5th day.....	3	10.0	6.0	0.	2
Per cent germinating	6th day.....	1	3.6	2.2	0.	1
Per cent germinating	7th day.....	0	0.	.4	0.	0
Total per cent germinating.....		83	60.8	27.0	0.	95

The difference in injury resulting from treatment to temperatures below freezing of soaked and dry grains is of interest. The following varieties of wheat: Illinois No. 1, spring bearded; Marquis, spring smooth; Dawson's Golden Chaff, winter bearded; Turkey Red, winter bearded, and Red Cross, winter smooth, in dry and swollen conditions, were treated for different intervals of time to a temperature of 10°F.

The air-dry grain subjected for ninety hours to a temperature of 10°F and then placed in the germinator at 59°F germinates Illinois No. 1 93%, Marquis 89%, Red Cross 85%, Dawson's Golden Chaff 71%, Turkey Red 93%. (These figures are slightly below the germination of the untreated samples.) Similar samples soaked in water for six hours and then exposed for seventy-five hours to a temperature of 10°F germinate Illinois No. 1 25%, Marquis 10%, Dawson's Golden Chaff 1%, Turkey Red 3%, Red Cross 4%. The same varieties soaked in water for three hours and then exposed to a temperature of 10.4° F. for forty hours, show a markedly decreased germination. Our results as a whole show a marked difference in resistance to low temperatures, especially when the water content of the seed is high. The ability to with-

stand the effects of alternate freezing and thawing, more particularly rapid thawing, is definitely associated with the protoplasmic constitution of certain varieties.

The studies of Dawson and Malsbury in our laboratories, bring out a number of interesting points regarding the optimal temperature for wheat varieties. Six varieties of wheat—Marquis, Illinois No. 1, Red Cross, Mediterranean, Illini Chief and Turkey Red were used. At a temperature of 77°F Red Cross produced very vigorous seedlings while those of Turkey Red were

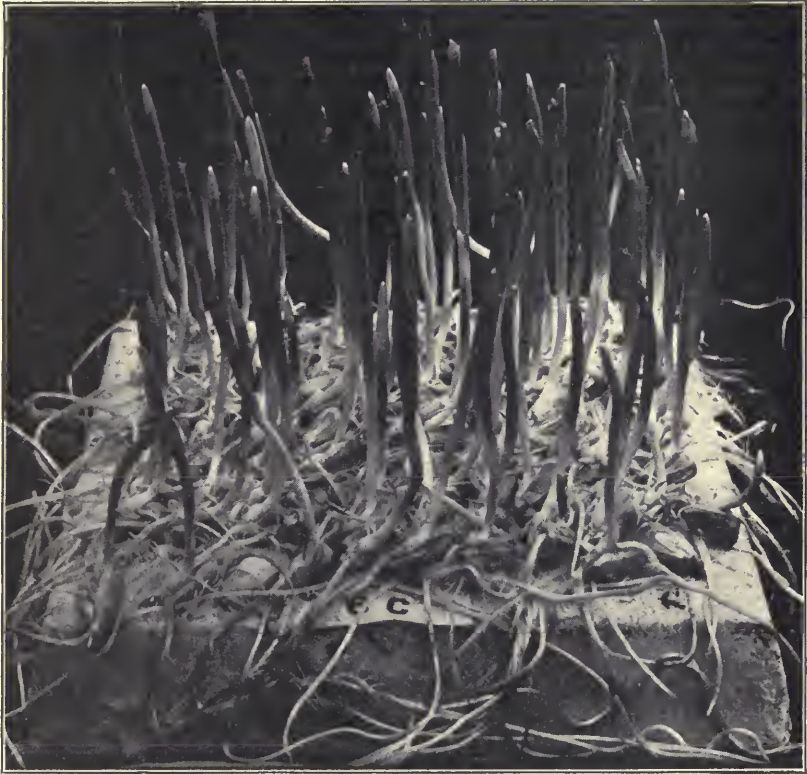


FIG. V.—Germination of corn harvested in the mature stage and dried before testing.

very weak. In per cent germinating Marquis, Illinois No. 1 and Red Cross were in the lead. At 59°F Marquis, Illinois No. 1 and Red Cross are still leading, and the seedlings are more vigorous than at 77° F. Turkey Red does not do so well at this temperature. At 50°F Red Cross is the only one that produced seedlings comparable in vigor to those at higher temperatures.

The agronomist and the farmer naturally are most interested in the quality and quantity of the harvest. Since this is determined in no small degree by the constitution of the seed—genetical and physiological—seed studies should and do receive our first attention.

"The thorns which I have reaped are of a tree
I planted—they have torn me—and I bleed,
I should have known what fruit would spring from such a seed."

PRESIDENT MANN: Are there any questions now?

Mr. THOMPSON: Do I understand the maintenance of constant temperature at the same humidity would tend to the highest per cent germination and the highest vitality of the seed?

Dr. HOTTES: Yes, sir.

Mr. THOMPSON: Is that condition desirable in the treatment of seed during the dormant period?

Dr. HOTTES: Yes.

Mr. THOMPSON: In carrying that on would the seed be apt to lose its resistance in the second germination?

Dr. HOTTES: No, because we are not allowing it to go too far here. We must not go beyond approximately twelve per cent. The most certain measure of life activity that we have is the respiration process. You know that when you exercise violently you breathe more rapidly. The plant breathes all the time.

Q. Your recommendation to the farmer is to build a seed storage plant to maintain a constant condition of moisture?

Dr. HOTTES: No, not necessarily a constant condition, but what we want to do is to get some method by which we will do our drying in such a way that we will not overdry or allow an over abundance of moisture to remain. Now it is ordinarily easy to do that under ordinary atmospheric conditions. If you keep the atmosphere humidity within certain limits the corn will not take up too much or lose too much moisture.

Q. In order to do that would you have to have some artificial heat?

Dr. HOTTES: No, no. That depends, of course, on your weather conditions. Now we could have artificial heat without any injury if we could regulate the temperature, and especially regulate the circulation of the air.

Here is another point. Be very careful of moist heat. Circulating moist heat is very effective in destruction.

Q. Do you think that the life of a seed that has properly matured and dried can be prolonged by keeping it in cold storage at an equal low temperature?

Dr. HOTTES: I think that that may be helpful, but on the other hand it may not necessarily be extremely effective, for the simple reason that your corn plant is a plant that is not accustomed to the lower temperatures as much as it is to the higher temperatures and a prolonged chilling may have the same effect as a sudden rapid drop. In other words in all of our work we have found that if we heat long it is the same thing as if we heat distinctly higher for a short period, or if we exposed it for a long time to a low temperature it has the same effect as a short time to a still lower temperature.

PRESIDENT MANN: It will withstand a low temperature if you have the seed dry enough.

Dr. HOTTES: Yes, it will withstand the temperature of liquid air.

PRESIDENT MANN: You get less respiration with low temperature.

Q. Have you made any studies of soy beans?

Dr. HOTTES: We are now testing some twenty-two varieties of soy beans. We are getting some interesting results, but I will give you only one of them, to give you an illustration of what this means. For instance some of our soy beans will take up the amount of water in two hours that others will take four days to take up. Another thing we have found is that some of the varieties are capable of piercing through a crust that other varieties are never able to come through. Those things we are going into now, but it is too early to make any definite statements on that line.

Q. I would like to ask a question in regard to the use of the Utility Score Card in judging exhibits of the county institute. I suppose that a great many institutes conduct exhibits in connection with the institute work. We attempted to use a Utility Score Card in our county a year ago, but it did not give very much satisfaction on account of the inability to apply the germination test. If we can't use the germination test, can we in fairness use the Utility Score Card, inasmuch as 35 percent of the score depends on the germination test? They attempted that in 1921 in Ogle

County, attempted to judge it by inspection without the germination test, and it did not give satisfaction.

PRESIDENT MANN: Mr. Campbell will answer your question.

Mr. CAMPBELL: In Knox County, where the utility corn test was started, we, too, have not been able to get them to furnish the corn in time to make the germination test, therefore we had to make it more a question of judgment than anything else. We gave the smooth corn the decision over the rough corn. In that we used the Utility Score Card, but the Illinois Corn Growers Association has placed Knox County and Warren County in the upper district, instead of in the central district, and that changes the length of the corn to eight and a half inches, instead of nine and a half, so we have just as good a chance as has Henry County. We think that an oily appearing corn that lacks the exterior cells where disease germs accumulate is better than the other, and that is the way we get at it. We take the Utility Score Card and use it right down until we get to the germination test, then we use our best judgment.

PRESIDENT MANN: I think it was Abraham Lincoln who said that the Lord must have loved poor people, because he made so many of them, and I think the same idea, the same reason enters into the production of corn. There are just two things we want in corn—one is yield and the other is quality, and quality is only one thing and that is maturity. Every point on a Utility Score Card that has reference to a certain thing ultimately comes right down to the maturity of the corn, whether it is for seed, sale or feed. Its quality is represented by its ability to mature, and hence the utility corn is that corn which is most likely to mature. For thirty years many of you know I have written and spoken against this idea of getting a uniform, beautiful show corn for actual production. Now we are getting back to the same old thing, and that is just common corn and the most of it. That is what we want. [Applause.]

Mr. CAMPBELL: May I also state that we do not think about the corn crop when we are judging it, but we do think about and keep in our minds all the time, "Will this corn produce, and how much will it produce?" Then we trust for the fields to do the balance.

PRESIDENT MANN: I think Dr. Hottes' explanation of the danger of the very deeply indented corn is mighty good. Maturity means the conversion of sugars into starches and oils. That is all it means. Plant sugars are easily destroyed by freezing or high temperatures, or in many ways. If an immature grain of corn is planted in the ground it would be good food for insects, fungi and bacteria. Sugar is what they live on. A perfectly matured grain of corn has practically no sugars in it. Under the lowering temperature which the corn meets in the fall it changes the sugars into starches and oil. Fungi, insects or bacteria can't live on that. Other organisms can, but the lower things—the lower organisms can't live on starches nor oils to any extent. Before the plant can get the food out of the starches and oils they must be converted into sugar. Sugars are starches in solution in water, so that grain of corn has got sugars in it. The sugars will permeate the soil by diffusion; they get away from the kernel into the soil, and there is always fungi or something lurking around in a good fertile soil, especially if it is a sour soil, and they feed on the dissolving sugars. Those diffusing sugars come up to the grain and destroy probably the grain and that corn decays. I have seen well matured corn stay in the ground under conditions that growth could not take place even after planted, submerged in water two or three weeks and then grow. Your immature corn could not stand more than two or three days before it would be dead. So everything in the utility corn idea leads up to the question of maturity.

Dr. Holbert is doing a wonderful work in the study of those resistive characters. We know certain characters are liable to be injured by infestation of some kind. We know poor lungs in an animal invite lung diseases. Not that the poor lungs cause disease; no, but they have less resistance. Hence, you want good lungs on your animal so you will avoid lung diseases. There are the same characters in corn. Starting out on that line of scientific breeding is going to have a wonderful effect in the next few years, not only

on corn, but perhaps on other plants as well. There is a great need for improvement on some other crops. Oats needs a good deal of improvement, but the corn needs the handiwork and skill of this breeder.

Q. Mr. Chairman, I don't know whether I quite get the doctor's view. Suppose we go to work and pick our seed, what seems to be a good seed for picking, and put it in a corn crib with a top on it, open around the sides, a common wagon shed, and there doesn't come any particular frost in the fall. Are we safe in saying that that is a fairly good way, a reasonably good way to store seed corn? Of course, once in a while we have a bad frost along about in October, the first half of October. Are we to say it is very unsafe without the assistance of some artificial heat?

PRESIDENT MANN: He told you one test is to twist the ear. As the corn matures the sugars change to starches and oils in the corn, and then when you get a stiff cob it is a mature cob. If you pick only that kind of ears you can hang them up in the corn crib and they won't suffer. Dr. Hottes told you you can put mature corn into liquid air. Thirty-two degrees many times will kill immature corn. That is the test for maturity. Stiffness of the cob is one test. Does anybody else want to say anything about corn or any other crop? This is a crop session.

Mr. GOUGLER: Mr. Chairman, I would just like to give a little observation I had along this line this fall, but it was with soy beans instead of corn. We had a very extensive soy bean grower. A year ago he decided to build a soy bean house. He built a two-story structure, probably twenty feet high. The upper part is divided up into six bins. Each bin will hold about three hundred bushels. In this lower part he has a pretty large heating plant that provides heat to dry them out. His idea was to be able to move the beans from one bin to the other at will. He put his beans in there this fall not very clean, with the idea of recleaning them. He went out one day and put his men to work recleaning these beans, and he allowed them to flow down over this pipe, over this fan, and then into the elevator and back into another bin. Now, the peculiar thing that happened there—the heat was just right in the room and the beans were cold, but as they passed through that pipe enough moisture was condensed that they took up moisture. They produced enough moisture, the cold beans in the warm pipe, that water just dripped from the end of that pipe all the time. He let his men go ahead and complete the bin. They went up into the bin a few days later and they found they had a solid wall clear across where they were frozen solid. It ruined the whole three hundred bushels. They were put in dry.

PRESIDENT MANN: He thought they were dry, but they held a lot of moisture in the sugar from the immature beans. We must appreciate the great value of ventilation in taking care of the seed. There is going off the same gas we are driving out of our lungs every breath—carbon dioxide. The drier it is and the lower the temperature, up to a certain point, the lesser the respiration that is going on, and if there isn't enough ventilation to carry away that carbon dioxide, which is heavier than air, then they claim it will change to alcohol in the seed and cause destruction. That is what happens when ice stays on wheat or clover. The carbon dioxide can't escape and stays in the plant to cause intoxication and death, and if any of you don't believe that you just hold your breath for three minutes and you will be dead drunk from the same cause, the formation of alcohol in your blood. I heard once of a man who paid a high price for a bushel of fancy seed corn. He was afraid the mice would get to it so he shelled it and put it in a carbide can and screwed the top on it. In two or three weeks he didn't have any more seed than a rabbit. Whenever you store seed corn, or any seed, store it high enough so there can be enough circulation to carry away that gas.

Mr. GRAY: Is it necessary to plant soy beans with a drill or broadcast them?

PRESIDENT MANN: Well, I would say you could do either one. Drilling is always more economical because you don't require so much seed, generally get it better covered, better distributed and all that sort of thing. You can do either one, of course.

Q. It has been advised by some of the speakers to butt and tip seed corn before planting. What would be the result of planting some butt and tip seeds, would there be any harm?

PRESIDENT MANN: I should say the butt grains, if you have them distributed over the plant evenly, would make better plants as a rule than the moderate size grains. The more food that is available to the plant, not only the amount stored but the condition in which it is, so the plant can use it more freely and readily, the more growth it will make. The first step, and one which largely controls the whole performance of grain production, is the formation first of the stalks, just as the doctor told you, the germ and endosperm cells, their proper mating so as to form some progeny. The plant has some motive in storing food. Sexual reproduction is a strong draft on the vitality of plants as well as of animals, and only the plant which has a strong start is able to get past that serious draft on its system. So frequently your crop depends upon that immediate step, just as Dr. Holbert showed you in his very first picture. Now in the smaller grain you have less food for various reasons. You are very likely to have an exposed tip and the grains have colds and adverse weather conditions to contend with. So I don't think it is safe as a rule to depend on using the tip kernels for seed production. That is my view of it.

Mr. CAMPBELL: Isn't it because of the peculiar shape of the butts and ends?

PRESIDENT MANN: That is what I would say if you get them evenly distributed, but they are uneven in shape, uneven in size, and do not go through a planter evenly and readily. You want a planter to drop two at a time, don't you?

Mr. CAMPBELL: Two and three.

PRESIDENT MANN: An end-drop planter won't usually handle kernels which are larger one way than a quarter of an inch. If they are larger than a quarter of an inch in one diameter, in one measure, they do not go through an end-drop planter. When you run them through a quarter inch sieve you have got nothing left but what will go through the common corn planter.

I will tell you another trick worth trying, too. The corn plant loves its offspring just as any animal loves her offspring and the plant will store more food and give more food to the stronger of the offspring. You take any ear of corn and there are large kernels in the middle of the ear and smaller kernels in the middle of the ear. You take out the larger ones and the smaller ones and plant them separately and see what they do. The plant loves the offspring. They grow better, not only better inherently but because they have more food to grow with. Try that once as well as your tips and butts.

WEDNESDAY EVENING SESSION.

February 22, 1922, 7:30 o'Clock P. M.

PRESIDENT MANN: The Chamber of Commerce of the city invites any and all visitors to the Chamber of Commerce headquarters, to make free use of their rest rooms and other conveniences. They had planned to give visitors here a free ride in an airplane, but the weather and soil conditions are not very favorable at present. If they should become favorable then their invitation will hold. They invite the people to visit the factories in the city and will provide free transportation to anyone who wants to visit any of the factories. Leave your names at either the Chamber of Commerce rooms, or the Y. M. C. A. building and you will be provided with facilities for visiting the various factories.

I am glad now to introduce to you the "Egyptian Song Birds" who will give us a little music. I want Mr. Filson to make a statement first.

Mr. C. M. FILSON: Good people, we are certainly glad to be in Monmouth this evening. When I first came into the hall and saw our good friends, Mr. Mann and Mr. Mason I certainly felt at home. Mr. Sites and myself are connected with the C. & E. I. Railroad Company. We sometimes style ourselves as a "farmer on wheels." We try to get an education along farm lines so we can get it to our people in the southern part of the state which you commonly know as Egypt. These little girls are daughters of Mr. Sites of the C. & E. I. Railroad. We have been to a number of places and people seemed to be well entertained. My good friend Mr. Mann heard them in the southern part of the state and nothing would do but that they should leave the school and come to this meeting. We hope that while they are at the Institute some of their numbers will please you. They have quite a number of songs. The girls say that when they see the smiles on people's faces they realize they like the song, and if they can get their hands working once in a while it won't hurt a bit. They will sing their version of "Illinois."



Dorothy and Doris Sites,
"Egyptian Song Birds"

Vocal Duet.....Dorris and Dorothy Sites

To our parents of the prairie,
In Illinois, in Illinois
What about your Joe and Sarah
In Illinois, in Illinois?
We are pleading with you now
For a calf to become a cow
"As the banks are planning how,"
In Illinois, in Illinois,
"As the banks are planning how,"
In Illinois.

If we go to the city,
From Illinois, from Illinois,
It would sure be a pity,
In Illinois, in Illinois.
Please don't drive us from our home
To the city there to roam
To be another city drone,
In Illinois, in Illinois,
To be another city drone,
In Illinois.

You can keep me if you try,
 In Illinois, in Illinois.
 We will tell you by and by
 In Illinois, in Illinois.
 Make the "home a place to be"
 And the rest you'll plainly see,
 Leave that up to Joe and me,
 In Illinois, in Illinois.
 Leave that up to Joe and me,
 In Illinois.

Let us own a pig or calf
 In Illinois, in Illinois.
 That will make us jump and laugh
 In Illinois, in Illinois.
 We're like other girls and boys,
 Share your sorrow and your joys,
 Let's have stock instead of toys
 In Illinois, in Illinois.
 Let's have stock instead of toys
 In Illinois.

Oh that mortgage you have now
 In Illinois, in Illinois.
 Will be lifted with the cow
 In Illinois, in Illinois.
 But the scrubs will have to go,
 From the pure blood milk will flow
 For Mr. Mason told us so
 In Illinois, in Illinois.
 For Mr. Mason told us so
 In Illinois.

Mr. Mann here today
 Of Illinois, of Illinois.
 He will help us plan the way
 In Illinois, in Illinois.

PRESIDENT MANN: We recognize our Domestic Science Department as the better half of the Institute and I want to introduce to you tonight the president of the domestic science department of the institute, Dr. Wilson of Manhattan.

Dr. EVA M. WILSON: It is certainly very pleasant to meet with both parts of the Institute. I am reminded to tell you what I said quietly to a group of ladies the other day. In pleading that we might have more long life among our men and our children I remarked that I not only wanted my children to work as hard as I do, but a little harder, and I decided I wanted to get father to work a little harder, —but I hadn't told father about it. However, I am convinced I am right, because we counted in a nearby village the other day, and we counted in our village, forty retired farmers' widows. So I think my position is right. I do not want to be a retired farmer's widow so we want to work.

We are very fortunate, indeed, in having with us a speaker whose mind is always working toward concentration toward that much



Dr. Eva M. Wilson.

abused word, but which expresses our meaning best of all, "Efficiency." You know they have told us we have all of everything here, all the sunshine, all the food, all the milk, all the water, everything that is good out in the country, and the only difficulty is we don't know how to use it. I sometimes think there is something in that. We have with us this evening one of those individuals who has learned how to use some of the good of life and how to get most out of that which is around us. It is with great pleasure that the Department of Household Science presents Mrs. Clara Ingram Judson from Chicago who will speak to us on the subject "Leisure—a Liability or an Asset." Mrs. Judson:

LEISURE—A LIABILITY OR AN ASSET.

(Mrs. Clara Ingram Judson.)

The teacher was talking to her children about heredity and had explained something of what it meant. After she thought they understood, she asked each child in the class what he would rather be if he could be anyone he choose. One pupil after the other chose famous people, until she got down to the little Irish boy at the end of the class. He said, "Teacher, I would rather be half Nigger and half Jew." The teacher thought she had not heard right so she said, "What did you say, Mike? I asked what would you rather be if you could be anybody you choose." Mike said, "I heard you, Teacher. I said I would rather be half Nigger and half Jew." "Well", said the teacher, "I don't understand, Mike. Why would you like to be that?" He replied, "That's easy. A Nigger is always happy if he has a dollar and a Jew always has one." [Laughter.] I feel like that, because you know I am always happy if I have a speech and an audience, and now I have both.



Mrs. Clara Ingram Judson.

I am going to talk about leisure. When I awakened my husband last night about two o'clock, and I told him I was going to talk to the Farmers' Institute about leisure, he said, "That will be a real joke! If you can talk about leisure to the American farmer and his wife without being run out of town, you will do more than I think possible!" It does seem a little strange, perhaps, to talk to the over-worked farmer about leisure, you and I are busy people, and if we have very *much* leisure we certainly don't realize it, do we? But I wonder if we haven't more leisure than we do realize.

What is leisure? The first thing we think of when we speak of leisure, is the man who sits at the roll top desk,—and by the way, they don't have roll top desks any more, they have smooth desks that somehow never get piled up because things are shoved into the drawers,—this man locks up his drawers and goes away in a lovely limousine about four o'clock on a work day afternoon. I have heard that that is the way the Chicago business men do. But the Chicago business man that I am best acquainted with doesn't do that way at all! There are so many things Chicago people are *supposed* to do that, although I have lived there a good many years, I have never seen them do. Just a little bit east of here, I was at an institute last winter, and I heard one friend say that everybody who lived in Chicago was a millionaire, so you see where I am! It places me very effectively!

Yes, when we think of leisure we think of being through work at four o'clock and driving away in a Rolls Royce, or some other grand-sounding car, going off to play golf. Isn't that our first thought of "leisure?" And

we say we can't do that. To be sure, we can't, you and I. I wonder if we would like it very much if we could. I think it would bore *me* to extinction, because I don't know of anything that is as much fun as work. But there are kinds and *kinds* of work. Sometimes I work in my leisure but don't call it work, because I recognize it as a pleasure and realize that I enjoy that particular task.

If I were to define leisure I would say it is the time we have left over after we have done the work that is necessary for a living. That is, the time we don't need to use to provide food, shelter and the necessary clothing. Now maybe that is not very much time. Let's see. When we are eating we are not working for a living. So there is mealtime, that is two or three times a day. There is some time in the evening when we are not working, and how about Sunday? We don't work all day Sunday. So you see all of us have some *spots* of leisure. I am not certain but what we might have more if we knew just how to go about it.

You know we have done a lot of mix-up thinking about this very important subject of time. I have had people say to me, "When you keep house and sew for your children and the like, how do you find time to write books?" I'll tell you a secret,—I don't. I never yet have *found* any time. I have walked up and down State street a good many times looking for various sorts of things, but never yet have I seen a chunk of time out in the street, nor have I ever seen any time out in the prairie. Have you? We don't find time! If we want to do anything we have to use the time we already have! We don't find new time!

24 HOURS A DAY FOR EVERYBODY.

We talk a good deal about equality and everyone having an equal chance in this country, and it is well enough to talk that way, but down in our hearts we know that everyone *isn't* equal. Look at some of the conspicuous inequalities! Some of us here are old, some are young, some of us are good looking and some go to beauty parlors; some of us are lean, thin and stylish and some are dieting; some of us are rich and some are rustling around still on our first thousand. There are all kinds of folks, but there is one real equality: whether you are rich or poor, old or young, wise or foolish,—you have twenty-four hours every single day—all your own. Twenty-four hours to do with as you like. I wonder sometimes, whether we need any greater equality! Just think what that really means! A Burbank, an Edison, a Wilson, a Roosevelt, a Lincoln, a Washington has twenty-four hours in his day; the man who spends his days sitting on the railroad ties has twenty-four hours in *his* day just the same, and yet look at the difference in the results!

You all know how some folks seems to get so much done and some seem to be everlastingly rushing—yet both have exactly the same amount of time. The same as you and I have—wherein is the difference?

Of course, if it was merely a question of getting something done and then sitting down with nothing to do, I think we had better hurry off home and get the work done and then just loaf. But it isn't that. You and I know it isn't that. The way to get a great deal done in our working time is to decide what we want most to do and thereto do it, I know only two ways of getting more accomplished in the twenty-four hours. The first is to eliminate the unimportant things, and the other way is to improve our methods of working. In these two ways we can, perhaps, hope to have more leisure.

But if we had more leisure what would we do with it? Can leisure be put to any good use? Take the time that I spoke of, the three kinds of time when all of us have *some* leisure, meal time, some evenings and part of Sunday. What ought that time if well used give to us? I could not have time in one speech to tell you all that it might give to us, but some of the main things that part of our leisure might give to us are, a sound body, good friends and higher ideals. Those are three worth while and important things we can hope to get from our leisure.

How can we get a sound body from meal time and evenings and parts of Sunday? How do you do your eating? And what do you eat at your house? You know it is a very interesting thing to go around and see how and what folks eat. Don't you like to eat at other folks' houses? Not at all to criticize, but to get an idea what other folks talk about, and whether other folks cook the same everlasting meat and potatoes, bread and biscuits. Sometimes when we have been visiting we come home and find that our own things taste awfully good, don't they? And yet it was fun to taste other folks' things. Kindly comparisons are both stimulating and helpful and we ought to "visit around" all we possibly can.

LEISURE AT MEAL TIME.

But how can we use our meal times? Well, for one thing we can eat slowly. Some say, "I don't have time to eat slowly, I am too busy." I can tell you one thing, and if there is a doctor here in the audience he will bear me out,—the man who eats too fast *wastes time*. The man who eats slowly conserves his time because he will have a good, sound digestion and he can get more done when he starts to work. The man who bolts his food may get through today all right, maybe next week, maybe next year, but some time he is going to pay for his haste with lowered efficiency. We working folks *can't afford* to hurry with our meals. If a man is rich, maybe he can afford to rush through his eating, but you and I who are plain working folks must be efficient, must be on the job, so we must eat leisurely to ensure economy of health.

There is nothing like talk along with a leisurely meal to make good digestion sound bodies and an optimistic soul. We all have phonographs. The other evening I was reading in one of the current issues of a popular magazine about how phonograph records are made and I thought then, as I have thought many times, what fun it would be to have one of those little record making apparatus right in our homes, so we could just turn a crank once in a while and get a record of what was said and then turn it on some other time to hear the record. Suppose you had one of those things hidden in the wall of your dining room and every time you sat down at the table you pressed the button and everything that was said, grunted and done was recorded, when folks were around to call on Sunday you could get that record and play it for them. Do you think that might be funny? Well, perhaps, but it might be embarrassing sometimes too. I don't know whether we would always like to hear those records. [Laughter.] The first time you sit down at the table after you get home just pretend that you are pressing a button and starting a record and then think whether you would like the resulting record. Would you pay fifty cents for it? Or eighty-five. [Laughter.]

Do you like to hear the news of the day talked about? Of course, sometimes we do and sometimes we don't. At our house we never talk about money at the table, except once a year when we make the budget. Budgets, as you know are my hobby. But folks do get into a rut even if they don't talk about money. However, I will say this, I believe talking about money is better than talking about nothing. I went on a visit at one time where they didn't talk at all. Of course, that was a beautiful chance for me, but still I didn't like it. I don't like to be the sole talker all the time at meal time, I would rather listen to some back talk—it is more inspiring. I think any talking is better than none at all, but the higher the grade of talking the more worth while is the meal time, and the better and more efficient will be the folks who get their nourishment around the hospitable, friendly and talkative board. Did you ever try having one meal a week when you could sit at the table as long as you wanted to and talk about anything you choose? We started that three or four years ago at our house. We choose one meal on Sunday, every Sunday, sometimes it is lunch,—sometimes we have breakfast, lunch and supper and sometimes we have breakfast, dinner and tea, just according to our notion,—but one of those three meals we plan so we can sit at the table

just as long as we want to; and everybody talks. Sometimes we sit an hour—our record is four and a quarter hours. That was the day we started in at breakfast, forgetting to go to church, and the next thing we knew it was a quarter past one.

And what do we talk about? What would you suppose? We talk about everything under the sun, from Babe Ruth to international politics, and all the way up and down the line. We are very fond of baseball. We have two daughters who are bigger than I am, one is a very good third baser and the other is a short stop. They both have very good batting records. Their father is very fond of baseball too, so baseball is a prime topic of conversation. I am not supposed to know anything about it. As a matter of fact I do, but I keep my knowledge a secret, because it is very much more fun for three people who do know a lot about it to have an ignoramus to enlighten. So I pose as an ignorant mother and ask what batting averages mean. They do not notice that I ask the same questions season after season. They do not think that I might sometimes get educated, because it is so much fun to instruct me. So we talk baseball, we talk politics, college education, religion, dietetics, clothes, dressing and Sunday School, and anything under the shining sun that anybody wants to talk about, with everybody having a chance to say whatever they want to say, and if we don't agree with the person who sits next to us that makes it so much more interesting, because if every one in the family agreed, what a bore that family would be. It is so much fun to debate. Disagreements in the family are so satisfying because they never end. You can't convince a person to change his mind so you have the fun of hunting new arguments till suddenly you discover that that topic is forgotten and a new one is under discussion. Talking about big things, if it is entered into with the right spirit, and by the scheme of one meal a week, is very stimulating in family life. Dishes can wait—and by the way, did you ever know anything that could be so safely and comfortably allowed to wait as dishes? I have heard women say they never went away from home and left dishes. (I hasten to explain that mine are all washed before I left home this morning!) I have tried the experiment sometimes of going away and leaving dishes and have come back hopeful that something might have happened, but nothing ever did. The dishes were right there when I came back, just the same as when I left. [Laughter.] I discovered if we wanted to sit at a table and talk and leave the dishes for an hour or two not a single thing happens to them. They are there quite comfortably. You can wash them at the end of the four hours and a quarter just the same as at the end of fifteen minutes. They won't run away! So forget the dishes and work just one meal out of twenty-one and see what good fun you can have when everybody lingers around the table for talk.

IMPROVE OUR LEISURE EVENINGS.

Then there are evenings. What do we do with our evenings? You who have heard my talk about planning the spending of our money won't be very much surprised to hear me say that we should plan the spending of our leisure. Perhaps that is a funny sounding phrase. But ask yourself, "what do I want to get out of my evenings?" Did you ever take pencil and paper and put your aims down in black and white? If you have, doubtless you have had the experience of discovering that you do not do all the things you intend. Never mind! You can keep on aiming high just the same!

Let us see what sort of things we would like to get from our evenings. We would like to acquire more social development. I like to see a man or woman who can have a good time alone. I would be rather suspicious of the person who never could take a walk or do a job alone and have a good time at it, because if there is one person on the face of the earth that ought to interest you is yourself. Maybe we really are worth getting acquainted with if we give ourselves a chance. But we want to know other folks too; we want to develop some social graces. For we live in a world

of folks and to get the most out of life we must learn to enjoy people to *get* something and to *give* something as we meet our friends and neighbors. We want to have a good time in the family, have a good time in our social group, in the small club, in the church, in the Farmers' Institute, farm bureau, home bureau, have a good time when we come in contact with people.

I think one splendid thing that the farmers institutes do, (I have realized this very much in the last year or two) is creating that fine inspiration that comes from folks getting together and doing something for somebody. Institutes give us a chance to try our hands at being members of a community organization; and, my friends, as we perfect the way of having a good time in our own communities, with all of us working together, singing, conferring, discussing,—as we learn how to do that, we will get a little higher, and a little nearer, an understanding of how nations, which are merely larger communities, can work together understandingly. In this community training lies the solution of international problems.

Then there is another thing that leisure can give us besides physical improvement and the social contacts, it can help us toward higher ideals. How can we get those? Through our church, through listening to good things, we grow to higher thinking. But in the quiet evening at home, we have a beautiful opportunity of reaching out to high ideals and better understanding by reading together,—perhaps reading aloud, perhaps each one reading by himself or herself—both ways are good and have their place.

BOOKS FOR LEISURE HOURS.

We need to think carefully about what kind of things we select to read. Speaking broadly, there are three types of books and we want to have a good many well chosen volumes in our homes. There is the type of book, we will call a book of direction;—that is, a cook book, a book about sewing, a book about the soil, about crops, poultry, anything that tells us how to do something.

Perhaps you will say this sort of book increases our power or earning a living and isn't something to be read in leisure time. Maybe so. Opinions differ. But some of us like to read such a book in the evening. Occasionally we choose to use some of our leisure that way.

There is another type of book, the book that we read for facts, and if we want to know more about the world around us we must have that sort of book at hand,—an encyclopedia, a history and a biography. That is the book that tells us briefly and accurately about the world around us. I like to read that sort of thing but I never realized how little I knew about the other side of the world until early this last week. I had an order for twelve stories for a child's magazine, each story to be about a different country, Siam, Alaska, India, the Philippines—all around the world those twelve stories were to go and each story was to be about a child in his own home in his country. Maybe that sounds easy, but when I began to write I found that I did not know enough,—not anywhere near enough! I had to go to the library and bring home several books, for careful study,—and what an interesting study that was! I found out for one thing how easily our Siamese sisters keep house. Some of them live in houseboats on the river because they haven't money enough to own land. They make a raft of bamboo, on which they set four posts supporting a thatched roof of palm leaves. Then there are thatched shutters that fold up and during a storm can be dropped down for shelter. The thing that interested me most was the way the Siamese mother keeps the floor clean. With her bare foot pushes dirt or rubbish through the cracks in the bamboo floor into the river. That is pretty easy housekeeping, isn't it?

Then the Chinese story is about a Chinese farmer. Do you know how he carries his stuff to market? No flivver, or car of any kind for him. He has a great big wheelbarrow with a wheel this (4 or 5 feet) high, that comes right up through the middle of a flat platform. He carries such a

big load that he could not support it with his hands so he has a harness that goes over his shoulder that sustains the weight. With that he carries rice, watermelons and all sorts of produce trundling the stuff along for miles and miles to market. I never knew that before,—maybe you did. If I had time I could tell you any number of fascinating things that I picked up in just a little study of other countries. Isn't it fun to know how folks keep house in other lands, how men earn a living, how they till the soil, how folks go to school in other lands? One thing above all others I have wanted for my children's education is money for travel. I would like to see other folks, see what they do, what they eat and what they wear. But I am afraid I have been making my wishbone my backbone! I can get fascinating books with pictures for a small sum, or from the library for nothing, and think how much we could learn if we took a trip around the world—in books! That would be a worth while way to spend evenings!

Then there is another sort of books, the third kind,—the books of real literature, books read—not for direction, not for facts, but to bring out thinking higher; books that make us understand folks' motives, books of poetry, of drama, and novels. I wonder if you like to read plays. I never could get as interested in plays as in novels. I used to wonder why, and I found out a little while ago. The folks in plays never explain, they just act and talk, and the reader has to have brains enough to figure out why they act as they do. While in the novel, the author takes the reader into his confidence and explains that so and so is going to do this because of this and the other; he tells the reader all about it so he can understand. Since I learned that, I have spunked up a bit, and I promise myself to read a play a year and to understand it.

Have you ever tried reading books aloud at home? We have never done a great deal of that in our house, not as much as we should; but during the last few years we have read four or five and oh, how we did enjoy those books! Did you ever read Huck Finn aloud? That is a great book to enjoy with home folks. Have you read Jane Austin's "Pride and Prejudice"? I don't know anything that is more fun to read out loud. "Treasure Island" by Stevenson, is fine, too! We read so many short stories nowadays. Somebody said to me this evening at the hotel, "I just get so sick reading short stories." Short stories are all right—a glass of soda water is all right, too, for a bit of refreshment. But you would not like to live on soda water as a steady diet. But the continual reading of short stories takes away our power of concentration—gives us mental indigestion. Every once in a while we should read a long book straight through. It doesn't make any difference whether it takes all winter or winter and summer, the time is not important if you enjoy doing it. See if you have gumption and stick-to-itiveness enough to read one book all the way through. It is good training and it is fun, too.

Why should our leisure be important? Why should we plan out the things we want to do with our spare time? Do you realize that the use of leisure is one big thing that makes the difference between man and the lower creatures? Animals can eat and sleep and hunt a place to keep warm, but animals can't play together as folks can.

One of the greatest thoughts that has ever come into the mind of man is the thought of growth—of evolution. This thing that you and I call mind, brain, as grown from way back at the beginning of time. You and I learn, when we study evolution, that your life and mine are not little sections set down here, and there, just like a patchwork quilt, with no relation one to the other. No, our lives are not like that. Our lives are a growth. You and I are a part of all that has gone before. We are a part and a product; and the things that we think and the things that we do, are the product of what folks have been thinking and doing way back since prehistoric times. I hope you will all read that very wonderful book, Mr. Wells' "Outline of History." You will give yourself a treat. It is an imposing sounding thing with 1400 pages, but, oh, such fascinating reading! I never read a novel that was half so gripping and moving. Read it sometime and read it loud. Don't be discouraged if you can't read it all at once. Read a chapter a

month or a chapter whenever you can. Find out what men and women have done by the use of the time that was left over after they earned food and shelter. It is in that time that we grow.

MAKE GOOD USE OF EACH GOLDEN MOMENT.

Someone said the other day, "Tell me what a man does after his work is done and I'll tell you how much he amounts to." You have all heard the story of the man who was asked what he did in the evenings. "Well, my friend," he answered, "sometimes we sit around and talk and sometimes we just sit." (Laughter.) That man will never get very far. We need the hour of relaxation before bed time or after dinner, it is beautiful and valuable. But it doesn't hurt that precious hour to use it for something! There is so much to talk about and think about, so much that we might dream of doing in this hour left over for us after the day's work is over. Let us value each golden moment and use it ere it passes!

What do we want to be? What do we want to learn? We do well to think and question thus. My friends, it is by the use of our leisure, by the use of this time that is left over after the day's toil, that some way or other we have worked ourselves up from the slime and mud, where life began, to where we are now. And from where we now stand, let us lift ourselves onward and upward till we reach the loftiest star!

I thank you. [Applause.]

PRESIDENT MANN: I am very glad to be able to introduce to you tonight Mr. Carl J. Baer of the St. Louis Chamber of Commerce who will talk upon "Interdependence of Town and Country".

INTERDEPENDENCE OF TOWN AND COUNTRY.

(Carl J. Baer.)

We have learned in St. Louis the big lesson that we, as business men in that city, are totally dependent upon the people surrounding the city of St. Louis, for our beautiful city is a part and parcel of the State of Illinois, the State of Missouri, and the sister States of the United States; that a city cannot be greater than the territory surrounding it; that the interdependence of town and country has not in the past been fully understood by all American people; that today we are in a critical condition throughout the civilized world, perhaps, primarily, because of a lack of understanding between the various groups of people in the world. We haven't been close enough to each other. There has been a great breach growing for a hundred or two hundred years between the groups of the people in the country and the people in the towns and cities. It isn't anyone's fault. No one is to blame. It isn't because one group is wrong or the other group is wrong. It is because we haven't understood fully how totally dependent we are upon each other.



Carl J. Baer

The nation is in a critical condition, but that condition is no grounds today for pessimism. We, in this American country, have tried to serve and do our part in the great world's conflict. We all entered the war. The boys who donned the khaki, of course, did more than the rest of us. Those who stayed at home, who could not go, men and women who served with the Red Cross, the Liberty Loan, the Y. M. C. A., the food propaganda—all of us did our share. There isn't a man, woman, or child in this audience who did not do his or her share in the world war; but when we left the great war problem on the signing of the armistice, and it isn't

a criticism, but as my good friend, George R. James, of Memphis, says: "We came right back from the war with a pair of goggles over our eyes; over one eye was the dollar sign, and over the other eye was the personal pronoun 'I.' How many dollars can I make as quickly as possible in order to give me what I apparently lost in the war?"

We did not realize what such a program would do to America. Our business depends upon our nation; our business depends upon our community, and depends upon the human side, or the welfare of the people. It took three years of the great strain on our nation to practically break the nation. There were too many of us trying to take too much profit out of our own business. The nation could not stand that strain. We should have given some of the time called "leisure time" to the construction of our community, to the construction of our state and our nation, and have realized that nearly four hundred billion dollars of a debt was created throughout the civilized world by all the nations owing each other, caused by a destructive program for nearly six years.

Let us spend the next hundred years in teaching our children, our grandchildren, their grandchildren and great grandchildren, to go forth and understand the human problems of life and to understand how totally dependent we are upon each other, to understand that relationship and to learn to love each other. Why, you can't be friendly with your neighbor until you know him. You may hate your neighbor, but to know him is to learn to like him. We have been criticising, we have been attempting to correct our economic conditions by criticism.

There isn't any group to blame for this—we are all to blame. We cannot learn to co-operate upon the program of criticism. We cannot criticise continuously and at the same time co-operate. So we must get together. Here we are—farmer, doctor, lawyer, merchant, manufacturer, professional man, teacher, preacher—assembled at a great institute meeting, an organization which meets regularly, one that has been built for the good of the people; these are the gatherings in America that are going to put us on our feet where we can all get together to discuss our relationship.

A BIG BUSINESS, BUT NOT PROFITABLE.

We have failed to look upon agriculture as a business, and we do not understand today, most of us, that agriculture is by far the biggest business in the nation, a bigger business than all the rest of business combined.

As a business man and farmer during the last fifteen years I have learned one lesson; that the business end of farming is a hard one and that the money in farming is mighty little, and all in all, in fifteen years, my opinion is that the American farmer hasn't made a dollar. Counting the labor, the investment, and the false credit for the profit because of the rise in the value of his land, and counting the fertility that has been robbed from the soil which belongs to all of us, the average farmer in the last fifty years hasn't accumulated any money; therefore, he hasn't made any money. I am therefore sure farming has not been a profitable business as a whole.

Some farmers have made money, but if you could come with me into the ten or fifteen southern states and spend one month with me in the rural schools and in the homes of those states and see your fellow farmers, and compare them to the wonderful homes, roads, churches and schools you have here in the states of greater rural development, you would agree that these statements are true.

Now, the farmer who does make money cannot maintain his business unless the average farmer in America makes money. Wheat might be raised cheaper in Kansas than in the other states, cotton might be raised cheaper in some states than in the others, livestock and poultry, and what not, might be raised cheaper in some than in others, but the average farming of this nation is the problem we are trying to solve today, what his average cost is and what his profit is, because his profit represents from forty-five to sixty per cent of the buying power of the whole nation. All the rest of the buying power depends upon this farmer. His buying power today is at least eight billion dollars short.

All business men, doctors, lawyers, professional men, are needed in this nation, and so is the farmer. The farmer must understand that the city is needed and the town and city man must understand that the farmer is needed, and the sooner we get together in our Chambers of Commerce, farm bureaus, and all other civic and business organizations, the quicker we can do this big job together, letting each organization function, if you will, separately, but having members of each to sit on boards of directors in other organizations, and to get a common understanding and see that the business men of the city are informed upon the problems of the farm, and see that in the farm bureaus and various farm organizations that there are enough city folks there to interpret the problems of the city.

Both sides can be fair. Both sides ought to be fair, but that lack of understanding, that suspicion and jealousy on the part of both sides for years and years has grown in some communities until it has caused a pitiful condition. Conditions of this sort are separating the people instead of bringing them together. The coming of the farm bureau is a big thing because it is a big institution, composed of all groups of farmers, various organizations coming together, with its basic program—education; education in farm problems, the backing of the Smith-Hughes and the Smith-Lever bills, the building of universities and colleges of agriculture, the backing of the boys' agricultural clubs, of home economics, of teaching and social uplift work. These educational organizations are the basis on which we are going to reconstruct our country. We will soon be able to put enough organizations of farmers together, not for malicious action or selfishness but for the benefit of all mankind, to understand the real meaning of farm problems. These farm organizations, Chambers of Commerce, commercial clubs, and others, will get together and solve the economic problems. But until both sides are well organized, it cannot be done.

EXAMPLES OF PROFITABLE CO-OPERATION.

I want to refer to a great example of co-operation—the great Arkansas campaign. In 1914 war broke out in England, France, Germany and Russia. The staple cotton crop of the South, which was our life's blood, about ninety-five per cent of all we had, dropped at that time to six cents a pound. We expected twelve for it. Our state went broke in a night time because our farming business went broke. We learned that we had been buying all of our food and feed out of the state, and when cotton dropped from twelve to five and a half or six cents, we did not have enough cotton money to buy the food and feed that we used that year. We called together a hundred bankers in Arkansas, at Little Rock at the Chamber of Commerce, and there for eight hours we discussed this problem. One bright banker said: "Let us find out how much money we send out of the state for food and feed." They sent six of us out over the state for six weeks. We went to the brokers and retail men, we went to the railroad men and we checked up the following figures: Twenty-five millions for meat, twenty-three millions for canned goods and the balance of eighty-three million dollars for corn, oats and mixed feed, to feed the mules that made the cotton crop. Just think of it! Eighty-three million dollars sent away for those things we should have raised on the farms. In consequence—we were broke. All the bankers knew was to loan on cotton; all the merchants knew was to sell on cotton credit. That crop for forty years had robbed the fertility out of the soil and thousands of acres were not producing half what they produced forty years ago. Was that a serious condition? Well, we put on a campaign known as "Let Arkansas feed herself." We called on your state and the best agricultural experts. We took men from the county agents, we took them from the Department of Agriculture—everyone that we could get. We got about sixty of the best agricultural experts in the country. We traveled thirty thousand miles in eight weeks. We went into each county. We talked to a hundred and fifty thousand farmers in their churches and in their school houses. Sometimes there would be thirty or forty at a meeting. The banker would get up and say: "Ladies and Gentlemen of the Farm:

We are here today as business men from the little town you have been trading with. We have come here not to tell you what to do, but to ask you to do some things in a co-operative way with us. We have been farming wrong in Arkansas and we have brought the experts from the University, from the Department of Agriculture. Here they are today. These men know scientific farming. We are broke in Arkansas. Now, unless we get money to save Arkansas from a great catastrophe from you farmers we never can build up Arkansas. We want you next year to have a better garden than you had last year. We want you to set aside an acre or two for oats; we want you to set aside an acre or two for corn, and a little pasture if you can. We want you to get a cow. We want you to get a few more pigs, a few more chickens, and when you have done that then raise all the cotton you can raise. Please don't raise any cotton until you have fed yourself and family. Don't raise so much food and feed that you will have a lot on hand, because we haven't established markets."

The farmer would get up in the back of the room and say: "Mr. Banker, I have been trading with you for twenty years. I know you are right; but you don't know what you are asking us to do—something that is impossible. We have not been taught this diversified farming. My kiddies have been taught to raise cotton and to pick cotton. I haven't the machinery, I haven't the fertilizer, I haven't the money to buy, I haven't the seed, I haven't the animals. I can't change farming in a night. I have got to have help."

The banker would say: "Mr. Farmer, we know that. We will lend you help. The merchant is here to say he will back you; the doctor says he will take care of your family when they are sick until you can pay. The university is here, the county agent will be furnished to you. The government says it will help you with the seed, and we, as bankers, will help you with money."

The farmer, like a man, rose in every case and said, "Then I will do the work." Was that agreement a victory? Yes, it was, and I will say that was co-operation. There wasn't any dividing line in that state then between town and country. Here's what happened in a year. A hundred and fifty thousand of those farmers said: "Yes, we will change. Give us some seed, lend us some money, give us a cow, we will give our mortgage for it; we will, if necessary go bankrupt, but we will try." In one year from that time the government sent its experts to Arkansas and they figured that we had more than thirty-five million dollars more food and feed and raised as much cotton as we had ever raised in the history of the state. Was that a victory?

My friends, let me give you a picture after seven years. The old school-house that was boarded up, without windows, and unfavorable educational conditions there, where the little kiddies had a limited time each day for schooling, is changing in Arkansas slowly to the consolidated school. The good roads are coming in. The banker who never loaned on anything but cotton has a man behind the counter who knows something of livestock. Millions of dollars have been spent by the government and we have eradicated that horrible pest—the tick, and now we can raise livestock; and you farmers know what livestock means to a farm—that we can't diversify and rotate unless we do it through the livestock route. We could not do that before; now we have a chance. Although Illinois, as rich as she is, with her sixty million dollar road program, and Missouri with her sixty million; and forty or fifty million in Iowa—still Arkansas has now issued a hundred million worth of road bonds and is building a hundred million dollars' worth of roads—more than any other state in the United States.

She is building it, not out of cotton. She is going to pay for those roads out of corn, oats, wheat, hay, clover; she is going to pay for it out of livestock; she is going to pay for it out of fruit and vegetables. Cotton is still king, and always will be, because of the climatic condition; but when we learn to rotate the cotton crop and bring back the fertility of the land, we are going to build a wonderful state.

Then the campaign was carried on over into Texas, in Alabama, and over at Memphis, Tennessee. Just a minute about the Memphis campaign. Memphis put on a campaign that nets them annually a hundred million dollars more business because the farmer thrives. Whenever you can give the farmer money and give him a profit, he is perfectly willing to be taxed for roads, schools, and churches, but he can't buy a school book on twenty-five cent corn. He can't buy education and roads and the things that we have in our cities unless he makes a fair profit over and above all expenses. And that is what we as business men have got to see to in the future; that these forty-five million people on the farms in America have an even break with us in the city, and everything we have in life, and when that comes about there will be a different country, there will be no conflict like we have between capital and labor. Why should not the rural boy and girl have every opportunity in life the same as we have in the towns and cities? Is there any good reason? No! I dare say that the child in the country today doesn't receive forty percent every year in money for its education compared to the hundred percent that is given in the cities. I know it is less than half. One state that has nine thousand rural schools educates half of its children in the schools of the country while the other half are educated in the cities and towns. Eighteen hundred of those schools have no drinking water—more than half of them haven't water fit to drink; most of them haven't any foundations, the kiddies' feet are on the cold floors a certain number of months in the year, and no shades in the windows—the kiddies' little eyes facing the light, seats too high or too low; one thousand without any toilets, more than half of them with toilets not fit to use.

The time has come when the American business men, both on the farm and in the city are shown such grave conditions all through this country, that we are going to rise as American citizens, both in the country and town, and we are going to begin at the great base of all economic problems to develop the human side; namely, the home on the farm and the school. That is the basis of it, after all. When we once get that home, with the right kind of road, there will be a different story to tell.

Let me cite another case. It was my pleasure five or six years ago to help in a road campaign of twenty-five million dollars in South Carolina. After eight or ten weeks of campaign in forty-five counties I had been telling the people of South Carolina something like this: "Ladies and Gentlemen of South Carolina: I don't want to hurt your feelings, but you used to be second and third in education a hundred and fifty years ago; you were one of the leading states of the Union. Now you have allowed these great states back here—Illinois, Iowa, Nebraska and Kansas to forge ahead of you. Here you are on the seaboard, with the markets of the world at your door, with the wonderful land that you had years ago when you were a great cotton producing state; your forefathers had the first smoke houses, and the livestock and pastures. Now those old hills are washed away and they are all barren, and the rural school is nothing. You have gone down from first and second until you are now the forty-eighth out of the forty-eight states in the Union in education. You are at the bottom of the ladder and you have more poverty than any other state in the Union. You have more pauper counties; you have more counties living on the other fellow. You have more illiteracy. What is the matter? That may hurt, and I say that for you to hear. But what is the answer?" A leading citizen said to me when I left there: "What is the answer?" I answered, "I will not attempt to prove that I know the answer, but I am willing to guess. If my guess is worth anything, here it is: You are poorer than any other state because you have robbed your soil over a greater number of years than any of the other states. You are older than we are. You have robbed yourselves poor." We made an estimate of a million of acres of land. In many cases we found the old fellows who farmed there before the Civil War, we took an estimate of the acreage and yield, and we found out of a million acres sixty to seventy percent were not producing within fifty percent of what they produced sixty years ago. And the answer was the home on the farm and the poor school

house. We found only one and a half hogs to the average farm, when Iowa was producing at that time thirty-four hogs to the average farm. We found the people spending cotton money to buy their hog meat and letting children go without schools.

We have turned the problem over in the South, friends, and we have now turned to feeding ourselves in the South and to raise the old cash cotton crop as a cash surplus; this cash surplus is giving us an opportunity to send our boys and girls to school.

Wisconsin is the next example of co-operation I am going to refer to. What happened forty years ago to our neighbor state? It was a great wheat state. After forty years of wheat, wheat, wheat, wheat, the chinch bug hit it one year, and the next year it hit it so hard that the farmers and bankers almost went broke. Everyone knows the story of Wisconsin. When the wheat failed what great remedy solved the wheat and chinch bug problem in that state? What did the university and scientific farmers do? They prescribed the dairy cow. The dairy cow was brought into the state, and after forty years the cow is still there. Then came the dairy business, and last year a hundred and eighty-seven million dollars worth of cheese and milk products was sent out of the state, and they are still holding their own in wheat. That is what the dairy cow has done. In forty years the rehabilitation of the land is coming back.

WHO OWNS THE LAND?

Whose land is this, friend? Is it the man with a fee simple title? Is it the doctor's, lawyer's, or banker's? Who owns the land? I am inclined to think we are only tenants for life. I am inclined to think the land belongs to God Almighty who gave it to us, and we have no right to pass it to our children at a less value than we receive it. That is my opinion on the land problem in America. Then let us give the man who tills the soil an opportunity to make enough surplus to rehabilitate it and build it up. He can't do it on a short margin. A farmer who is compelled to live on that close margin is going to take from the Nation the fertility of the soil and undermine the whole understructure upon which the superstructure rests.

BALANCE WHEEL OF PROGRESS.

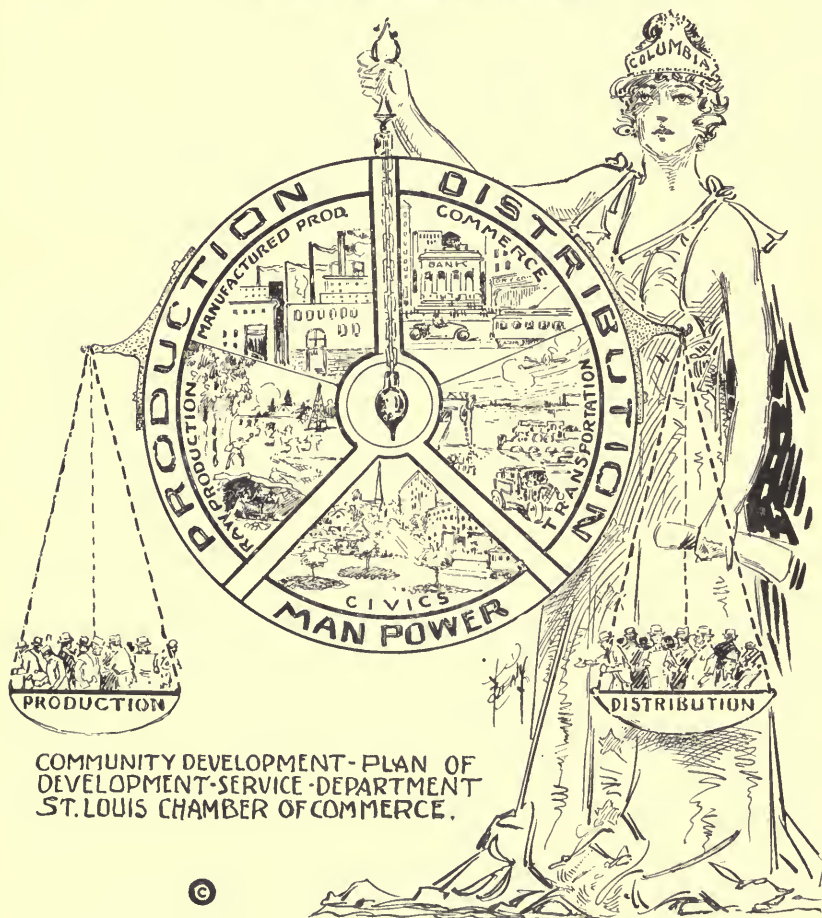
So let us help him and let us understand that there are five great problems in life to solve. Only five problems—we divide these five segments of the wheel, or spokes, into the five fields of endeavor of the American people. Here we call your attention to the chart, known as the "Nation's Wheel of Progress." Notice, it doesn't divide its segments into Jews or gentiles, Catholics or Protestants, Democrats or Republicans, Farmers' Union or Chamber of Commerce. It doesn't talk in those terms at all. It says there are five problems, and the five I want to mention are: first, the civic development in this segment here. Then the raw production segment, where we create raw products. Then manufactured products. Then, transportation, or the movement of things, and commerce, or buying and selling of things. We claim that everything in life is included in these five, and that you can't name any field of endeavor of any man, woman, or child, that isn't included in the wheel.

Now, if we have five spokes to the great wheel of progress of the nation let us strengthen those spokes equally, let us give them the same vitality, let us keep them all equally strong, let us put the strain equally on the rim of the wheel by holding each spoke as perfectly in its place as possible. Let us deliver services every day to the American people from each one of these segments and see that each group of people makes a fair and reasonable profit. If you take out any spoke from the wheel, it crushes the whole wheel. This shows conclusively, friends, that we need all branches of business built by co-operation.

Before I explain the segments in detail, I want to call attention to the rim of the wheel and to the hub. In the rim of the wheel we have the little dots which represent the people of the United States. If these people

of the United States, which means all of us, if they hold together for a common cause, if they understand each other and co-operate, if they all work for all of the people instead of just for a group or clique, if we don't get into the condition that Russia got into, or Germany, or that Rome fell into years ago, we are going to have a strong rim, which can only be accomplished through closer relationship and co-operation.

THE NATIONS BALANCE WHEEL OF PROGRESS



Then the next is the administration hub. In our nation this hub represents the senate and house, the president and his cabinet, no matter whether they are Democrats, Republicans or Socialists, or what not. They should be Americans and they must love their jobs for America's sake instead of any group or faction. In other words, we must have in the future more business in the hub and less politics.

So here is the whole wheel ready to go, with a strong hub and rim we are going to build with strong people who hold together in five fields of endeavor, represented by these five spokes. Let us analyze them.

CIVICS THE FIRST SPOKE.

What does the first spoke of civics in the wheel mean? It means man-power, the home, the church, school, playground. It means the environment and opportunity for the little boy and girl on the farm, in the school there and in the school in the city, the chance in life to develop. That doesn't mean the city only, friends, but it means the country and community. I wish you would go back to your homes, whether you are business men of the farms or business men of the city, go back with this thought, that the whole country and community belongs to you; that the whole thing is yours; that the whole thing depends upon what you do for it, not just the growth of the town or the growth of the country.

You must look at your community as a whole. We have the development of the boy in his physical, spiritual, moral, intellectual and economic side—this means the school, home, playground, and it means business. We have to give the boy and girl a better chance and give them an opportunity and a better chance than you and I had. We have passed upon the policies of this war. We helped, perhaps, to save the world from this great calamity, but we have put this nation in debt. It wasn't these tiny tots, it isn't their fault, and we cannot leave this nation in any strained or stressed condition that will put a burden on these little boys and girls. Let us go forth and see if we can't find some way to make the whole nation better than she is and put the people together while we have a chance. So much for civics.

PRODUCTION AND DISTRIBUTION.

When the man power develops itself, which is the first job, there are but four jobs left. On this side of the wheel is the word "Production." There are two kinds of production. On this side is "Distribution." There are two kinds of distribution. There are two methods of production—raw materials and finished products. There are only four kinds of raw materials in the world—water products, forestry products, mining products and products of the field.

What proportion does agriculture bear to all the raw products of the Nation? It is fair to say that seventy per cent of all the raw products in the world come from the farm. Seventy cents of the raw material dollar then is the farm dollar, and the whole farming problem is suffering. Now let us see what the government is spending every year for you as farmers and as merchants and bankers. We spent five and a half billion dollars last year to run the American government. Ninety-three per cent of it was spent in the payment of our past war debts and maintaining the army and navy. One percent of the hundred went to education and agriculture, and one-third of one per cent was all that agriculture got. Therefore one-third of one per cent, or thirty cents out of every hundred dollars in our Nation today, is devoted to the thing that makes seventy cents of every dollar. It is wrong. We can't get much more money from the government—we are doing better than we did twenty years ago, but we haven't got the money in our government treasury to spend. So you, as farmers—and you as doctors, lawyers, merchants, preachers and teachers must get behind agriculture. That is what we are preaching. You must do the thing in the local community. The town here, and the towns in every country—the cities must work hand in hand with the farmer and with his farm organizations. We must get closer together. We must find a way to educate the county agent and help him. Years ago we found it hard to get much work done in the club work among the farmers. How easy it is today in the town to do these things where all men and women folks get behind it, and how hard it is when some man or woman gets out alone in social work, or farm club work.

Let me tell you how you can help. You all know it, but let me suggest it anyway. Get in behind your farm bureau, your grange and your farm organizations; get in behind your Chamber of Commerce now—not tomorrow, or next week or next year. Become members in both organizations, the farmer organization and the city organizations. Have a mixed

board of directors in each in order that they might pass upon the problems that are dependent upon each other. Let us work together in the future in a common cause to save humanity as we did in the last few years during the great war we had.

TRANSPORTATION—RIVER, RAIL AND TRUCK.

We next turn to transportation. When we create things we must move them. We have neglected transportation for years. We have failed to build roads because taxes were high; a state which has to compete with a state with good roads can't compete unless it has roads which are equal to its sister states. Then we have river and rail transportation, and now we are carrying stuff by aeroplane. Transportation must be unified; *river, rail and truck* must become the tripod of transportation, and every effort must be made by all citizens to place these three forces of transportation so that they might co-operate and not *fight for their existence*.

MANUFACTURING.

Then we have manufacturing. In order to convert raw materials into finished products we must have manufactories. We need labor in the factory and labor on the farm nearer balanced than it is. When a man puts the price of labor up in a factory, it affects labor on the farm. When the price of labor in the factory went up, with a high wage scale and short hours, thirty thousand farmers closed their doors in Michigan and moved into the city of Detroit and other cities. Why? Because the job was better. We can't blame those fellows. Too much of that kind of work in the Nation puts men and families idle, slackens buying—and then corn, wheat, oats and everything slacks up. Here is a lesson we must teach everybody in this country. That no two million men in the United States can tell the rest of us forty million workers what we can, or cannot do.

COMMERCE.

The last segment is Commerce. Gentlemen of the city, this interests you and gentlemen of the farm, it should interest you. We have to have banks. The banks don't belong to the bankers; the banks belong to you. The banks are places where you deposit money. You must not be too severe with the banker because he does not lend you money. He is the custodian of *your* funds and you are going to be severe with him if he does not take *very good* care of it. Then comes the doctor, lawyer, engineer, advertising man, publicity man and the insurance man—all necessary in your life and my life. The city man is a necessary adjunct. We must have our central trading places in which to go. We must have our courts, our financial centers, our great social centers. We must have a place to distribute our own goods, therefore the city, friends, is ours, the town is ours. Let us learn to say "My town" and "My county," and not criticise the town or country. Let us say it is one great regiment of soldiers who must fight together. If we fail in the farm business, we are going to fail in the city business, so let us equalize the burden of all parts of the great wheel in the future.

Don't allow this wheel to be thrown out of balance. If distribution is outweighed in the scale of life by production it causes the whole Nation to go out of balance. The whole distribution segment has fallen over, and unless we stop it now it is going to pull the entire wheel structure to pieces.

So here is the disease of the great American people as we see it—lack of understanding, a conflict, and the cogs don't mesh in the wheel and they are out of gear. Now let us stay right on the job and find out what this trouble is, oil it up and put it back to work. Then if we get it back, even if it takes fifty years, let us bring it back to an economic balance, and see to it that when we get it in balance it won't go over the other way.

"HOW MUCH CAN I PUT INTO IT?"

In conclusion let me say this: We are all today in the great wheel of Progress; we are all placed in certain segments, and the strength of each segment depends upon the individual service of the people in that segment. their love of country and love of community. You can't do the job without loving your neighbor. Do something every day for somebody else. Learn to love each other more than you do. There isn't a mother who gave up a boy, nor a sister or father, that said before the war, "Well, what do I get out of it by giving that boy?" There wasn't a boy who put the uniform on that said, "What is there in it for me? What do I get out of it? I go over there and fight for you men, but what do I get out of it?" He didn't say that. They learned the big idea in life, "*That it is a good thing to serve.*" There wasn't a mother who said: "Your boy can go first and be killed. Let my boy be second, or third." No, the mothers turned like loyal women and said, "Take my boy and, if necessary, his life; he must fight for his country first." That was the spirit that won the war.

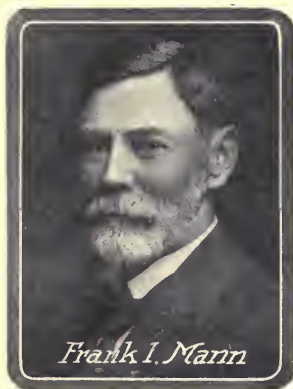
Let us go forward as neighbors and friends all over the state of Illinois. The St. Louis Chamber of Commerce will be glad to help. We want to work with you. We want you to work with us. We are only a part of you. Therefore, let us go forth—all of us—in life and follow the great motto that it isn't a question of how much I can get out of it, but let us say to ourselves every day: "How much can I put into it?"

PRESIDENT MANN: The rules provide that the president of the Institute each year shall give a short address, and if you will stay a little longer we will impose that on you.

PRESIDENT'S ADDRESS.

(*Frank I. Mann.*)

Th last act in Creation was the creation of man, and to man was given dominion over all that had been created, with three injunctions: to multiply, replenish the earth and subdue it. The human race has multiplied until it covers the four corners of the earth; the wild plants and wild animals have been subdued for the use of man, as evidenced by the wonderful wheat plant from the wild weed and the more wonderful dairy cow from the wild beast; but no people have ever yet replenished the earth.



Frank I. Mann

Because the earth has not been replenished, there have been wars, famines, pestilences, crimes and ignorances: wars of conquest, for land on which to grow food; famines, because of land exhaustion; pestilences, because of inadequate food; crimes and ignorance, because people cannot develop morally and intellectually when they must struggle for mere physical existence. Wars will not cease, nor will crime and ignorance be overcome until the injunction to replenish the earth is observed.

A LEADER IN ORGANIZATION.

For the first time in the world's history there are organizations of men founded on the principles of the earth's replenishment. The Illinois Farmers' Institute took the lead among these organizations, and it has been steadfast in its extension of these principles. It was because of the efforts of this organization that the University of Illinois through its College of Agriculture made a study of the soils and soil problems, and developed the Illinois Permanent System of Agriculture, the fundamental principle of which is replenishment. It was largely through the efforts of the

Farmers' Institute that the College of Agriculture was so highly developed that it was able to solve this great problem which has perplexed mankind for so many ages.

The Farm Bureau and the Illinois Agricultural Association was also founded on the principles of the earth replenishment; and permanent agriculture is nearest to the heart of the County Adviser and these associations. The Farmers Institute paved the way for the County Adviser and the Farm Bureau in Illinois, and it should be proud of the fact. The extension of scientific knowledge by the institute to the farmers of the state so lowered their prejudice and raised their confidence that they became willing to advise with scientifically trained men under the name of an adviser. This seems to be true in no other state, as the corresponding official in other states are called agents, secretaries, etc.

The Farm Bureau and its state and national associations are essentially business organizations; organizations to aid the farmers in solving the details of many problems—problems of securing raw materials needed in land replenishment; problems relating to the distribution of products, and various other economic problems; the efforts being extended largely to those holding memberships. While these problems are of deep importance, and especially pressing at present because of the break down in a part of the world machinery, the problems of production are also likely to be pressing in a short time, both as individual and world propositions.

There is no conflict between the Farmers Institute and the Farm Bureau and the state association. As a rule the utmost harmony prevails. The lines of activity of both are clearly enough defined to provoke no conflict. If there have been points of friction it has been because men lacked wisdom, and not due to any lack of harmony between the organizations. There are stronger farm bureaus and better farmers institutes where there is the best co-operation between the two.

OPEN MEMBERSHIP—SERVICE TO ALL.

The farmers institute has been criticised sometimes because of the looseness of its organization. It is true we have a loose, or open organization. There are no paid memberships; no fees and no dues. All who wish to be are members. Memberships are open to all alike; the rich or poor; the proud or humble, have an equal voice in institute affairs. The superstructure of the institute rests on the farmer himself; he it is who decides what the farmers' problems are, and how, when and where they may be given consideration. Every one has an equal right to say who the institute officers will be; the times and places of meetings, what subjects to be discussed and who the speakers will be. It is because of its form of organization that the institute is able to give consideration to the problems of the humblest farmer as well as those of the more successful. As the institute is based on the farmers' problems it has no place for party politics, or for the jealousies of political leaders. The Institute so far has not wavered from its line of duty, and may that day never come when it will forget its true functions.

In some other states they also have farmers institutes. In some cases the farmers institutes are managed by a department of the college of agriculture, or by an appointed board of management. In such cases, the times and places of meetings, the subjects discussed and the speakers who discuss them, are all arranged without considering the desires and wishes of those who are to be benefited. It is fair to assume that this type of institutes will not do the good, nor will they have such an influence as when the meetings are planned and conducted by those who are the most interested.

A few years ago the women rather pushed themselves into the Institute and demanded that consideration be given to the problems they were meeting. It was much the same with the Institute as with the colleges of agriculture; as Dean Bailey said, there being no other place for domestic science the college of agriculture had to adopt it. Fortunately, the Institute adopted domestic science and formed such a department. We recognize that the problems of the home are just as much problems for the

farmer as for the farmers wife. We now realize that our Domestic Science Department is the better half of our organization. The women deserve all we can give them.

A word should be said regarding the devotion of institute officers and speakers. The Farmers Institute is a public service institution. Its only motive is to render service—to give service to the most humble farmer and the farmer's wife; and those who bear its burdens must be imbued with the spirit of rendering service. It is true that some who give much time receive some compensation, but such compensation is small compared to the sacrifice that must commonly be made. Those who have tried to use the Institute for personal gain, or private ambition, have realized their delusion and soon dropped out. Those who are steadfast to their principles in rendering service will continue to be familiar names in county and state institutes.

WHAT OF THE FUTURE?

We should not be depressed because the problems of distribution, made acute temporarily by the breakdown in the world machinery of finance and transportation, must be given immediate attention. The acute stage of these problems will no doubt be soon solved, while adequate food production will remain a world problem. Who knows how soon it may become a pressing problem in this country? We have already drawn out of the soils of the United States about one-half the virgin fertility, and under excessive soil stimulation we are still reaping abundantly. It may not be long until the demand will come for the American farmer to try to produce more abundantly than ever before. Large areas of land are now within a step of abandonment, made so by the various methods of rapid exhaustion. This state must take the lead in promulgating the principles of permanent agriculture, and the Institute must continue to do its share in this great work; and there is much to be done.

The Institute has recognized that in the home life of people there may come inspiration for a higher development and more worthy achievements. The Institute is committed to the cause of home building, and there is much work ahead for it in this line.

The Institute also recognizes the value of true education in lifting people out of the mire of ignorance and crime, and in the future it will continue to do all it can towards developing better schools for all classes.

I have heard it said that the Farmers Institute had about reached the end of its needs; that its work was about done. How can this be, when so much remains to be done along the lines it is working? The work of the Farmers Institute is hardly begun. As long as there is need for a permanent agriculture; as long as there is need for better crops; as long as there is need for improved homes; as long as there is need for more efficient schools, there will be work for the Farmers Institute; and as long as the Farmers Institute continues to render unselfish service and to perform its proper functions, just so long will the Institute live and prosper. And may its end never come.

I thank you. [Applause.]

PRESIDENT MANN: Tomorrow evening at seven o'clock the Monmouth High School Band will begin a program of music. Our regular program will begin at 7:30. We stand adjourned.

THURSDAY MORNING SESSION.

February 23, 1922, 9 o'clock A. M.

Male Quartette.....Monmouth Glee Club
Invocation.....Rev. W. H. Craine
Vocal Duet.....Doris and Dorothy Sites

PRESIDENT MANN: We will have first this morning "Swine Disease Control" by Dr. Jas. A. McDonald of the Department of Agriculture, at Washington.

SWINE DISEASE CONTROL.

(Dr. Jas. McDonald.)

GENTLEMEN: The subject of Swine Disease Control I believe has been discussed through the papers, through the press and through the associations at different times more than any other one subject that confronts the farmer at this time. Swine disease control is a subject that has attracted attention, particularly along the lines of scientific research, for a period of several years and recent efforts have accomplished a considerable reduction in losses, but as yet no plan has been perfected that promises the eradication of these diseases.



Dr. Jas. A. McDonald

There were 4,585,000 hogs on farms in Illinois January 1, 1921, valued at \$13.70 per head, a total value of \$62,814,500. For the year ending April 30, 1921, 206,325 hogs died from disease, a monetary loss of \$2,826,652. The business of animal production is attended with losses from disease sometimes disheartening in character. Diseases and conditions among swine have been reported in Illinois during the past year as follows:

Hog cholera, hemorrhagic septicemia, mixed infection, swine plague, necrotic enteritis, necro-bacillosis, pneumonia, parasites, posterior paralysis, "Flu", dysentery, indigestion, chemical and forage poison, tuberculosis, dermatitis, tetanus, rickets, rheumatism, gastritis, thumps, injuries, exposure and scours.

Tuberculosis in swine is prevalent and gradually on the increase each year. In some establishments where federal inspection is maintained, the hogs retained for tuberculosis are 40 per cent of the kill. The importance of this disease should not be overlooked, for more animals are condemned from this cause than any other disease in establishments where federal inspection is maintained, and many pure bred hogs are affected unknown to the owners.

During the last two or three years there has been a great deal of discussion among recognized authorities as to these different diseases and the mixed infections, hemorrhagic septicemia and such as that, but of late the authorities who are not interested financially in the manufacture of remedies for these conditions have concluded that hog cholera is the one disease that kills most of the hogs. Along with that we have this so-called "Flu", and necrotic enteritis. They are the next to hog cholera in the destruction of the hogs in this state.

INFECTIOUS BRONCHITIS—"FLU".

The term "Flu" came into use about the same time that influenza was prevalent in the human subject. It appears to be a highly contagious form of bronchitis, or bronchial pneumonia, the causative agent of which is not known. The disease occurs in hogs that have been recently changed from pastures to full feed, especially a diet rich in protein. The disease frequently appears at fairs, where hogs have been fed for show purposes and their movements limited to small pens, and where the heavy feeding has been followed by chilly nights of autumn and cold days and nights of winter.

This disease is characterized by sudden onset and spreads rapidly in the herd. The temperatures in typical outbreaks range from 104° to 108° F., and usually drop to between 103° and 104° the third day when, if the hogs survive, they are usually back on feed. Spasmodic breathing, or thumps, is one of the first symptoms noted. The hog will sit on its haunches or lie

on its breast and, when urged to move, will have violent fits of coughing. Some will vomit stringy mucous the first day, markedly tinged with bile; eyes are red, swollen, and weeping; the discharge from the nose is often streaked with blood; and there is a loss of appetite in the acute febrile stage, which usually returns with the drop in temperature in two or three days.

Thrifty, growing shoats and young hogs are most susceptible. Thin, poorly fed and unthrifty hogs seem to be singularly free from the disease. The treatment for this disease is almost entirely hygienic, placing the herd in dry, clean, well-bedded quarters, with plenty of fresh air and free from draughts, an abundance of clean, fresh water, and little or no food for twenty-four hours. Usually a herd that is affected in this way will recover without any other treatment.

Hog cholera virus should not be given to hogs suffering from this disease and, if cholera appears in the herd while in this condition, serum alone treatment should be given and followed later by the simultaneous method to insure lasting immunity.

NECROTIC ENTERITIS.

Necrotis enteritis is a disease of pigs which may be mistaken for hog cholera and which results in great losses to hog raisers in Illinois. That this disease does exist independent of hog cholera is established and although it may stimulate hog cholera in some respects, there are diagnostic features that sharply define this disease.

It is quite apparent that the causal organism is of the group which inhabit the intestinal tract and infect soil which is rich in decayed vegetable matter. The warm rains of spring and fall seem to favor the growth of these organisms, as the disease is prevalent at these periods. When a hog lot, which is low and wet, once becomes infected, the disease persists year after year. Pigs pick up the infection with their food. Suckling pigs may become infected when the sow's teats are contaminated. The age predisposes to infection, as the disease is seen in pigs up to six months, most frequently showing from the second to the fourth month; older hogs seem to be resistant. The disease is sometimes seen after lye or other caustic agents have been fed.

The disease assumes a chronic character, the pigs show a general unthrifty appearance, lack of growth, the hair looks dead, the skin dry and scurvy, the feces being thin, yellowish, and peculiarly offensive, while the pig becomes emaciated, yet has little temperature, and the appetite usually persists throughout the disease, which is a marked contrast to cholera.

The treatment for this disease is largely through sanitation. After separating the well from the sick, remove the well to a clean pasture if in summer; in the winter, remove to a clean, dry, sheltered place, disinfect houses and troughs with standard disinfectant and lime; plow up infected lots if possible. Many pigs may be saved in the early stages by treating with intestinal antiseptics and mineral or linseed oil. Feed soft feeds, and see that the drinking water is pure. Do not inject virus into pigs in this condition. If cholera should appear in a herd affected with necrotic enteritis, use serum alone and, after the hogs have recovered, retreat with serum and virus to insure lasting immunity from cholera.

HOG CHOLERA—SYMPTOMS AND TREATMENT.

The symptoms of hog cholera differ in different hogs and in different herds, depending upon the strength of the germs and the resisting power of the hogs. As a result of these variations the disease has been said to exist in two forms, acute and chronic, though the germ is the same in both. In the acute or severe type hogs sicken and die quickly, so that the farmers will say that a hog which is found dead in the morning was well the night before. In the chronic or less severe type hogs may be sick for weeks or months before they succumb.

When cholera begins in a herd the hogs do not all become sick at once, but, on the contrary, only one or two will refuse to come up to feed with the herd. They will remain hidden in the nest, and when driven from the bed their backs may be arched and they may appear cold and shiver. The balance of the herd may remain apparently well for several days, when others are likely to be found affected in about the same way as those first attacked. As the disease progresses, the sick hogs become gaunt or tucked up in the flank, and have a weak staggering gait, the weakness being most marked in the hind legs.

If the lungs are affected there may be a cough which is particularly noticeable when the hogs are disturbed. The eyes usually are inflamed and show a whitish discharge, which may cause the lids to stick together.

Constipation, which is commonly present in the early days of the disease, is generally followed by a diarrhoea. As the disease reaches its height, red or purplish blotches are likely to appear upon the skin of the ears, of the belly, and of the inner surfaces of the legs.

Some of the symptoms mentioned may be present in other diseases, but the owner should remember that cholera spreads rapidly through a herd, and too much time should not be lost in undertaking to distinguish it from some other disease.

The temperature of the hogs is of such importance in diagnosing cholera. The normal temperature in ordinary weather when the hogs are not excited or worried will range from 101° to 104°F., but when cholera is present it is not uncommon to find a large proportion of the hogs with temperatures from 104° to 107°, and even higher.

The important changes found in the carcass after death from hog cholera are as follows:

1. Purple blotches on the skin.
2. Blood-colored spots on the lungs, on the surface of the heart, on the kidneys, and on the outer surface and inner lining of the intestines and the stomach.
3. Reddening of the lymphatic glands.
4. Enlargement of the spleen, in acute cases.
5. Ulceration of the inner lining of the large intestine.

Any one or all of these changes may be found in a hog which has died from hog cholera. It is rare to find all in any one case. In the lingering or chronic cases of hog cholera it is usual to find the intestinal buttonlike ulcers, while the blood-colored spots described above are, as a rule, found only in the acute cases.

HOW THE DISEASE IS SPREAD.

Hog cholera destroys about 90 per cent of all hogs that die from disease. It is an infectious disease, due to a specific cause, hog cholera virus. The virus is known to develop only in the body of hogs. Therefore, the sick hog must be considered the primary source of danger to a community. Hog cholera virus is eliminated from the sick animal in the urine, faces, and secretions of the eyes and nose. The blood of sick animals also contains the virus, so that the entire carcass of a hog dead from cholera is dangerous.

With this knowledge at hand, any attempt to prevent the spread of the disease must be directed towards the infected animals and such objects as may become contaminated with his excretions.

Transportation of hogs, especially by rail, has resulted in the almost universal infection of stock cars and public stock yards. This offers an excellent opportunity for spreading infection over large areas. Stock hogs being shipped to various localities, having their natural resistance lowered due to the exposure of shipment, become easy victims of the germs of hog cholera, which may be present in the stock yards or stock cars. Even though the hog itself does not become infected while in these cars or yards, other objects to which manure, bedding or dirt may adhere can carry this infection. Such infected material may cling to wagon wheels, feet of men and horses engaged in hauling or driving the hogs to the farm and although

the hogs themselves may be thoroughly disinfected and isolated on reaching the farm, these other objects, capable of carrying the infection, must not go without proper attention.

What is true of the public stock yards is equally true of the infected farm. While the public stock yards may act as a seeder of hog cholera to many widely separated farms, an infected farm is even a greater danger to the neighborhood. The shorter the distance hog cholera germs must be carried by objects other than sick hogs, the greater is the danger of infecting healthy herds. Men trespassing upon infected farms, automobiles, farm wagons, implements, dogs, and birds may readily carry infection to nearby herds, unless precautions are taken.

Streams passing through infected pastures or feed lots may carry the virus to distant farms. Dead hogs allowed to lie unburied and carcasses not properly disposed of become bait for dogs, buzzards, and crows, which may carry portions of the diseased carcass to healthy herds.

The practice of exchanging farm labor in threshing, silo filling, and other farm enterprises offers another avenue for spreading cholera. While this exchange of help cannot be readily avoided, its danger must not go unnoticed.

Purchase of new stock, lending or borrowing breeding stock may bring infection to the unsuspecting owner.

Although the hogs of an infected farm may have recovered and are themselves no longer a source of danger, the houses, pens, and runways in which they have been kept may remain a source of infection unless properly cleaned and disinfected.

When consideration is given the great number of avenues by which cholera may be spread, the problem confronting the owner who attempts to keep a cholera-free herd is readily appreciated. It is evident that by employing sanitary measures the disease can be controlled. To insure success, sanitary methods must not be employed in a half-hearted manner, as only the most energetic and painstaking efforts will produce satisfactory results.

All newly purchased animals, especially those coming through public stock yards, should at least have their feet thoroughly disinfected. If a dipping tank or other suitable container is not at hand, allowing the animals to remain for an hour or more in a small enclosure, in which straw has been spread to a depth of eight or ten inches and soaked with a disinfectant, is beneficial.

The wagon in which the hogs have been hauled should not be allowed to stand in a place where it can come in contact with the remainder of the herd. The feeder should be as careful in going from newly purchased hogs to those already on the farm as he would if cholera was known to exist in the newly acquired animals.

Feed lots and pastures are best located when situated some distance from public highway and away from streams and open ditches. The less accessible the feed lot and pasture are for trespassing, by men, vehicles, birds, dogs or other animals, the better is the location.

Hog houses and pens should be constructed so that they may be readily cleaned and disinfected. Sunshine, nature's disinfectant, should be admitted wherever possible. Yarding of vehicles, farm wagons, implements, etc., in hog lots is undesirable. The feed lot so situated that it is necessary to pass through it in going to and from a public highway is an invitation for disaster.

Newly purchased stock, stock borrowed for breeding purposes and stock exhibited at fairs should not be immediately placed with the home herd, but preferably such animals should be kept in a pen separate from the others for at least two weeks. This will allow sufficient time for hog cholera to develop if these have become infected.

Dead animals, even if they did not die from cholera, and the offal at time of butchering should be burned completely or deeply buried to avoid attracting dogs, which may travel from an infected lot to your own.

WHEN CHOLERA APPEARS.

When cholera appears in your neighborhood it is best to confine your dog and request your neighbor to do the same.

Should cholera appear in your herd, it is advisable to treat all susceptible hogs. Destroy and bury, or burn, all hopelessly sick animals. Confine all treated animals to a limited range. Collect and spread all manure in field, so that it may readily be reached by sunlight. Burn all litter, loose boards, and old hog troughs which may harbor hog cholera germs. After removing all rubbish, spray the walls and floors with a good disinfectant. Often a false sense of security is obtained by the owner after an inefficient application of a disinfectant. To secure the best results, all objects which have become contaminated with the excretions of sick hogs must be thoroughly saturated with the disinfectant. Unless this is done, ill results may follow when new hogs are placed in these inclosures. When hog houses will permit, they should be turned so as to expose their interior to the action of sunlight.

Hog wallows and cesspools should be either drained, filled in, or fenced off. Runways beneath buildings should be closed to prevent hogs entering.

Now I recall a few years ago one place where under an old barn hogs had died fifteen years before, and there came a storm and the men tore the boards off from underneath this old barn and let some hogs in there, and in the course of time, the required time, they developed hog cholera. Undoubtedly this disease had stayed under that old barn for fifteen years. Old straw stacks should be removed and scattered over a field or burned.

Many drugs and compounds have been placed on the market, for which great claims were made as preventives or cures of this disease. Without exception, anti-hog cholera serum is the only known agent capable of protecting animals against hog cholera. The method of producing this serum as devised by the United States Bureau of Animal Industry can be summarized as follows:

THE INOCULATION TREATMENT.

Hogs that have been rendered immune to cholera by the inoculation of serum and virus are employed in the production of anti-hog cholera serum. These immune animals are injected with a large quantity of blood obtained from cholera sick hogs. The injection of a very small quantity of this cholera blood would produce disease in any susceptible hog, but with the immune animal even the injection of large amounts of this blood produces no ill results. Ten days after the immune hog has been injected with the cholera blood his own blood will contain a large amount of substances which will protect against this disease. The protective substances or anti-bodies are so concentrated that comparatively small amounts of the blood when injected into other hogs will protect them against cholera.

The question arises, "How are we to know that this blood does contain sufficient amount of anti-bodies to protect other animals?" Since no animals other than swine are susceptible to this disease, it becomes necessary to inject healthy pigs with cholera blood and at the same time administer a dose of the serum to be tested. Large amounts of blood obtained from many different injected immune hogs are mixed and a sample taken from this mixture is used for the test, so that by one test the value of many quarts of serum can be shown. The most suitable animals for test purposes are pigs weighing from 45 to 90 pounds. Seven healthy pigs are used for each test. Each of the seven pigs is injected with two cubic centimeters of the blood from cholera sick hogs. Of these pigs, five receive twenty cubic centimeters of the blood from immune hogs; two of the pigs receive no serum; or, in other words, have nothing but their natural resistance to withstand the attack of the disease. If the serum possesses the proper protective power, all five of the test pigs will remain healthy. On the other hand, those receiving the cholera blood but no serum will take the disease and die. It is necessary that the two pigs receiving no serum sicken not earlier

than the fourth day nor later than the seventh day after inoculation, as this is considered proof that all the pigs are susceptible to cholera and the virus injected was sufficiently active to produce the disease.

All serum produced under federal inspection must undergo this test. Now, you hear considerable about one serum being better than the other, and all that, but all that is manufactured under government supervision undergoes exactly the same test, and there should be no difference in serums that are manufactured under government supervision.

No set rule can be formulated as to the most suitable time for treatment. General condition of the herd, prevalence of cholera, size, weight and other factors play important parts in determining the time of treatment. As a general statement, it is safe to say that a herd should be treated immediately upon the outbreak of cholera within it or where the disease occurs upon neighboring farms. Hogs of any age or size may be treated. Hogs showing physical evidence of cholera are rarely benefited by the use of serum, while those in the initial stage of the disease often improve markedly after its administration.

SERUM OR VIRUS.

Serum treatment is generally used in one of two ways—either serum alone or serum and virus simultaneously.

Since anti-hog cholera serum is the blood of highly immunized hogs capable of conferring immunity to susceptible animals, it will readily be seen that the injection of serum alone can in no way produce the disease. Unfortunately the duration of an immunity resulting from serum only is comparatively short, and the cost of treatment is virtually the same as that of serum and virus simultaneously. The immunity conferred by the use of serum and virus simultaneously is, if not permanent, at least of long duration. This treatment, when properly applied in healthy herds, has given most gratifying results and is the method generally used.

The resistance of individual hogs varies greatly and can be accurately judged by no one. Lice, intestinal parasites, other diseases, spoiled feed, improper housing, etc., tend to lower the natural resistance of an animal, and as a result he becomes more liable to disease. When serum and virus are used under these circumstances, perfect results should not be expected.

The results of treatment of swine are often influenced by the after care of the herd. During the first ten days following treatment only moderately light feed should be allowed. Thereafter they should be gradually returned to the full grain ration. Pure water, clean quarters, exclusion from wallows and stagnant ponds are always advisable.

ESSENTIALS IN DISEASE CONTROL.

The three fundamental essentials for the control of swine diseases are vaccination, quarantine and sanitation.

Vaccination—Potent serum, virulent virus, properly administered in sufficient dosage, are essential to insure a lasting immunity against hog cholera.

Quarantine, voluntary or involuntary, is necessary to prevent spread of infection.

Sanitation is both a preventive and a control measure. A good definition for the word sanitation is, all that can be done to preserve health. It should be the object of the owner to first prevent disease by the proper surroundings. Animals that are forced to live in unsanitary quarters, eat their food from unsanitary troughs and contaminated ground, and drink polluted water cannot thrive as well as those kept under favorable conditions.

Germs retain their disease producing power for a long time in dark, damp places; also, the eggs and larvae of internal worms and lice accumulate in the refuse and soil.

Disinfection means the contact application of a germ or parasite destroying agent. Such agents are effective only when applied directly to the germ or parasite that is the cause of the disease. Many of the disin-

fectants have a markedly unpleasant odor, and for commercial advantages much credit has been given the one that gives the most offensive odor. The odor does not destroy the disease germs. Again, disinfectants are not all equally applicable to the destruction of all disease producing germs; therefore, disinfectants of known quality should be used for particular needs. No single disinfectant is appropriate in all cases. Select the proper substance, apply it liberally, allow ample time for the disinfectant to do its work, for success depends in a large part upon the care and exactness of the person who prepares and applies the disinfectant.

I thank you.

PRESIDENT MANN: Now if there is any question that any of you would like to ask this is the time to ask it.

Q. I would like to ask what kind of a floor would you recommend for a hog pen?

Dr. McDONALD: That depends on the man that has the hog house. Some of them prefer dirt floors, others cement, and others wooden floors. Many of them prefer the cement floors with the wooden floor on top of it, a floor that can be taken off of the cement and cleaned out. Really, I would not know which to recommend. It is a matter of opinion.

Mr. HAYNES: Will the suckling pigs carry that immunity through life?

Dr. McDONALD: That is a question that is very much in discussion. I don't believe they will. The chances are that if you take pigs from sows that have never been vaccinated and give them the treatment early, up to four or five weeks of age, they may retain that permanent immunity, but I have never advised anyone that had to vaccinate his pigs that early to get the idea that he might have immune hogs. I always advise that they revaccinate them after they get older. If you expect to keep them for breeding purposes I would advise that they be revaccinated after they get older.

Mr. TULLOCK: What age do you advise is about the best age for vaccination?

Dr. McDONALD: The best age for all purposes is a week before weaning or a week after weaning. I don't like to vaccinate pigs at the time you take them off the nurse. The change of food sometimes makes a big difference.

Mr. HAYNES: If the mother has not been vaccinated you would have to vaccinate the mother too, would you not, at that time?

Dr. McDONALD: I certainly would. I would not want to use any virus around any hogs that had not been vaccinated. I would not let any unvaccinated hogs come in contact with hogs that had been recently vaccinated. Dr. Conway has proven on numerous occasions that hogs carried the virus in their blood virulent enough to produce disease in nearly all hogs up to six days after vaccination, and he has produced the disease with blood drawn twenty-one days after vaccination from a vaccinated hog. So virus is one of the most dangerous propositions we have to deal with in the hog raising business.

Mr. TULLOCK: In the case of hog cholera, after inoculation, under ordinary conditions how much time would have to elapse before it would be safe to restock?

Dr. McDONALD: It would never be safe to restock on a lot that was badly infected unless it was thoroughly disinfected. You take a lot where they were feeding cattle, where the hogs have burrowed deep in the ground for feed, infection will stay there almost indefinitely. If the lot can be plowed up it would help a whole lot. The sunlight will destroy the germ there in a very short time, but in a damp, cold place where the germs can thrive it will stay almost indefinitely.

Q. In the case of forage poison what are the symptoms?

Dr. McDONALD: They vary. Sometimes you don't find any symptoms. Sometimes they die so quick you don't see them. Sometimes they lie without any temperature and apparently in a comatose condition, the temperature may be subnormal, and lie that way for maybe twenty-four hours

before they die. And again they may take on the cerebral symptoms. They may act like they are crazy, and sometimes they jump in the air and fall over dead. That depends on the different poisons. The symptoms vary considerably.

Q. Should the sick hogs be given both treatments when they are vaccinated, both the virus and serum?

Mr. McDONALD: That depends on circumstances. We always made it a point to give the hogs both treatments, regardless of whether they were sick or well. I can't see where the addition of two cubic centimeters of virus in hogs that already had a quart of virus in them makes any difference. Where you go into a herd that is sick with cholera and take temperatures, which everyone should do to determine the condition of the herd, if you chase the pigs around you are liable to increase their temperatures from excitement. In that case if you give serum alone you would only have a temporary immunity in the hog which later on would come down with cholera and you would blame the treatment for the loss of the pig.

Q. I would like to ask about the use of minerals. Some of the minerals that are recommended are very expensive. What form would be effective at a moderate price? What do you think about the use of minerals?

Dr. McDONALD: Well, I guess there are quite a number of hogs that need them. I do not believe, however, that hogs need as much mineral as we have been led to believe they do through the advertisements. I don't think anyone knows exactly what amount of mineral is absorbed by these hogs. There is no doubt but what some of the minerals are beneficial in some cases. As to the price of them, why, that is just a matter of market prices.

Q. Which are the most essential? That is what I am getting at, leaving out some of the high prices.

Dr. McDONALD: Well, I think that charcoal, lime and phosphorus are about the essential minerals.

Q. If pigs are weaned and healthy do you think it is necessary to change their feed at the time of vaccination?

Dr. McDONALD: From what they have been getting?

Q. Yes, sir.

Dr. McDONALD: No, I do not, any more than I would advise that they be kept off of corn for a period of ten days or two weeks. I believe you would get a more permanent immunity where hogs are vaccinated if they are given a chance for the serum and virus to work before they are put on full feed. When the government was demonstrating the use of serum and virus in 1913 and 1914 they would not vaccinate in a herd unless the owner would agree to keep them off of corn for at least two weeks.

Q. There is just this question in my mind: what is the difference between the virus that the farm bureau uses and the virus that the veterinarian uses? The veterinarian claims the farm bureau virus is no good.

Dr. McDONALD: I don't know, I am sure. All virus is made the same under federal supervision, as I told you before. If there is any difference, it would probably be in the keeping of the virus after it left the manufacturer for distribution.

PRESIDENT MANN: One of the great problems that humanity has had for a while besides production of food has been distribution of food and in the past the farmers have rather depended on the city people to solve most of the problems regarding the distribution of food and other problems, but now the farmers know that unless they have a hand in solving those problems that the producer will not get a fair share of the returns.

Now there are a good many problems relating to marketing. Marketing of the surplus product is an old proposition. The first step in marketing is the haul of the product of the farm over to the local elevator, the stockyards and distributing points, and I think it is fortunate for agriculture that such strong organizations as the state association and farm bureaus are getting near to the solution of this first step at least, and later the other step will follow in the great problem of the distribution of the product, the marketing. Now they are feeling their way along, but they are doing some

mighty good feeling down in St. Louis. I think the whole thing will spread like wildfire after a while.

Mr. Fulkerson will speak to us on "Co-operative Live Stock Marketing." Mr. Fulkerson is connected with the Producers Live Stock Shipping Association of East St. Louis. Mr. Fulkerson:

CO-OPERATIVE LIVE STOCK MARKETING.

(Joe Fulkerson.)

MR. CHAIRMAN AND GENTLEMEN: The farmer has realized for a good many years that he has not been getting what he ought to out of his livestock. He knows that the country shipper is taking too big a toll out of the stock that he handles, but outside of a few strenuous kicks nothing has been done, until the idea occurred to somebody to start a co-operative community shipping association. This idea has been so successful and the farmers are so well pleased with it that it has spread all over the country.



Joe Fulkerson.

The country shipper has been fighting this because it interferes with his business. Not long ago in my town a farmer was button-holed by a local shipper and a blue-sky man. One said, "Now look here, you are an intelligent farmer, what do you want to spend your money paying dues into the farm bureau for? That farm bureau isn't doing you any good. You would better save that fifteen dollars a year and put it into groceries for your family." He looked at the stock buyer and replied, "Now, I'll tell you. Do you remember last week when I brought three old sows into town, took them around to you and you made me an offer on them? I took them over to our shipping association and shipped through them and I saved five dollars apiece on them. That

is fifteen dollars. That would pay my dues for a year." Then he turned to the blue-sky man and said: "Remember talking to me about a month ago when I was just ready to bite off a good big chunk of your oil stock? A monthly letter of the farm bureau came out and told me all about the blue-sky business, and that monthly letter just stepped right in between you and my farm. Now, I have made up my mind that as long as this old world is such a dangerous place for a farmer to live in fifteen dollars a year is a pretty cheap price to pay for a guardian to look after my business."

The farmers have realized for some time that this co-operative shipping part of the game is not all of it. They thought, "Now then, if this is such a success and we are getting so many benefits from this why not go a step further and get over into the other side of the game, carrying it just a little bit further and sell our stuff on the market ourselves after we get there with it instead of leaving it all to the commission men?" The commission men said the co-operative shipping association was the finest thing ever, but when you start talking about a livestock commission association that is a different proposition. "You fellows let that alone. You keep away from that and let us handle it."

It was the desire on the part of the farmers to get into the commission business, carry this thing through and finish the job. They wanted to do something about it, but how were they going to get at it? You can't get a man from Iowa, another man from Missouri and another one from Illinois to get together and form a commission association nearly so easily as you can go into a community and get a bunch of farmers together and in one afternoon organize a shipping organization. They wondered how they could

get at it. There was only one avenue through which they could travel and that was through the American Farm Bureau Federation, with its arteries running out into nearly every state in the Union and branches leading into nearly every county in the different states. So the matter was put up to the American Farm Bureau Federation. The executive committee of that association saw the importance of it. So they called a conference and decided to appoint a committee of fifteen to go into this matter and see what could be done. That committee of fifteen was appointed. On that committee were members of state farm bureaus; they were men that were on the market, like the late Mr. McKerrow, who was manager of the St. Paul commission company that Mr. Montgomery will speak of this afternoon; they were range men out of the west; they were men representing little farms in New England. They got together and worked for ten months on this plan of the producer marketing his own livestock. Last November this committee of fifteen presented its report. Representatives from all the state farm bureaus in the United States were invited to that conference, also representatives from all the large livestock associations in the United States. For instance, the Corn Belt Meat Producers Association, the Wyoming Wool Growers Association, the Texas Cattle Growers' Association, the Colorado Livestock Producers' Association and so on. There were about four hundred men there representing all the different livestock interests from all over the United States. They were from West Virginia on the east to California on the west, Minnesota on the north to Texas on the south.

It was some job to get up a plan that would fit all the different conditions, a plan that would fit the man who markets perhaps a half dozen hogs or three or four steers a year and the man out west who markets a whole trainload of cattle at once, or a whole trainload of sheep. This thing was threshed out there and on Armistice Day, the 11th of November, the report was adopted and they went to work immediately.

PLAN OF ORGANIZATION.

Now this great plan, which is a national plan, provides for this: The organization of these shipping associations throughout the country; commission houses at the various market centers; a national livestock producers' association with a board of directors which superintends this whole proposition. In order to get under way, the first national board was appointed by the American Farm Bureau Federation, and the national board in turn appoints the directors of the different terminal associations. In speaking of terminal associations we mean the commission houses at the different markets that are operated by the farmers, or I should say the producers, because there are a great many ranchmen in the west that are big producers but are not, strictly speaking, farmers.

This national board of directors has control over the different terminal associations, but they do not in any way interfere with the local management of these concerns. They select these directors and it is placed in their hands and it is up to them to make a success of each individual commission association. They report to the national board and keep in touch with them. The object of the national board is to give this thing a kind of general supervision, we might say, keep everything going harmoniously between all these different boards, not only keep them all in harmony, but keep them all in line with one general plan.

Then another big job for the national association, and it is a great big one and is going to bring us wonderful results, is to look after the legislation, both state and national, for the benefit of the producer. One problem that confronts them now that must be looked after and must be solved is freight rates that do not discriminate against the producer.

Another thing is what we call "feeding en route." A miller can buy wheat and ship it into some market, some manufacturing center like Chicago or Minneapolis, manufacture that wheat into flour and ship it on east at one rate, one through rate. Now, if they can do that there is no reason on earth why a man should not buy cattle in Texas or Kansas City and fatten them

and take them on to Chicago, Indianapolis or Buffalo at one rate. That is nothing more than just and right and it means a whole lot to the producer.

Another great big problem that they will have to figure out is the distribution of livestock to market. For instance, we have great big runs—stuff will go off fifty cents or a dollar a hundred. There is no reason on earth why the same hog is worth two dollars and a half less today than it was yesterday. That is out of all reason. It ought to be worth just as much. A hog may sell for two dollars and a half less today than it did yesterday and yet the bacon and the pork out of that hog won't sell over the counter for one cent's difference.

If we can get control of this flow of stock to the market we will do away with these things. You go to the market on a big run and every man there will tell you if he had known this he would not have been there. That is true, they would not have been there, because nobody wants to bring on himself the penalty for helping bring on the big run. If the people knew how to distribute this stuff to the market they would be very glad to do so.

When we get our commission houses over the country—the national supervision board having a view of this whole situation—and there is a man loading, for instance, forty or fifty miles out, some others are loading out in the country a hundred miles away, or a hundred and fifty miles away, you can get word to those people to hold back or divert to other markets in order to get this stock in more uniformly.

The packers are with us. I think the packers would very much prefer to have the stuff come in uniformly. They say the fluctuation, dropping fifty cents or a dollar a day is their only relief, because when the stuff comes in a great run so that they can't handle it, it costs them more to take care of it. They have to have a big body of men there to handle the big runs and they are not all needed on light runs. If they can get a uniform flow to the market they will be a great deal better satisfied, and can give us fairer prices for the stuff, whereas they can't under the present system.

OPPOSITION FROM THE EXCHANGES.

The exchanges are making a big fight on our plan because it cuts into the business of the commission men. Right here let me make clear just what the difference is between the exchange and stockyard company. I find there are a great many people that have been going to market a good many years do not quite understand where the exchange leaves off and the stockyards begin. The stockyards company is a corporation that owns the stockyards, owns the exchange building, owns all the hog and sheep houses and cattle pens; and also supply and control the price of feed. The exchange is a kind of lodge or club, or whatever you might see fit to call it, composed of the commission men and traders doing business at the yards. They do not own anything in regard to the yards. They do not have anything to do with the price of hay or the price of corn, or anything of that kind. They are simply agents. The stockyards company and the exchange are entirely separate and distinct. The stockyards company is very favorable to the terminal associations, as we call them, to the organization of these farmers or producers' commission associations. They treat us just as well as they do the "old line" commission people, but the stockyards exchange, composed of these commission agents, is putting up a strong fight against us. They are putting out all kinds of propaganda. The National Livestock Exchange, which is composed of these various exchanges all over the United States, is making a strong fight, because they do not want the farmers to get a foothold on these markets, and they are using all kinds of propaganda to prevent it.

One of their favorite arguments is that it is too expensive, that we are going to have a national board drawing down about fifteen thousand dollars a year apiece and that we are going to have a board of directors in each of these terminal markets drawing ten thousand dollars a year apiece. Then we are going to have high priced salesmen, office help and all these things to handle it, and it will amount to about one million dollars. Now, just a little bit about that million dollar proposition.

The officers receive no regular salaries. They are paid per day for the actual days they work, as follows: National board—president, \$25.00; executive committee, \$10.00; directors' meetings, expenses only. Terminal boards—president, \$15.00; executive committee and directors, \$10.00.

The boards of directors meet at least four times a year, and as often as is necessary. When the national board of directors meet they have a representative from every one of the terminal associations having commission houses in operation. At present there is just one. The one at East St. Louis is the only one that has been organized so far. Chicago is next, then Buffalo, Indianapolis and Cleveland, then perhaps Kansas City.

Now, then, each terminal association sends a representative to the national board, and when the amount of stock handled by a terminal association is sufficient that representative becomes a member of the national board, and the different boards are tied up closely with each other. The national board knows what the terminal association is doing, and the terminal association knows what the national board wants it to do. The national board on November 11, as soon as the report was ratified, appointed a board of directors for the East St. Louis commission house. This board of directors is composed of three men from Illinois, three from Missouri and one from Iowa.

WHAT THE RECORDS SHOW.

We started on the second day of January. We sat there all day and did not get a hoof. We were a little bit disappointed. It did not look very good for us. The second day we got ten carloads. It looked a little better. By the end of the week we stood twelfth place among fifty companies doing business at the yards. It seemed that all of the shipping associations over the country had the same feeling. They did not want to be there the first day; they wanted us to get started. They did not want us to practice on them; they wanted us to practice on the other fellow, and they all thought, naturally, we would get a good many on the first day—get things straightened out, and on the second day we would be ready to handle theirs.

We handled the thing as satisfactorily the first day as we handled it last week. We got our manager and our head hog salesman from the Denver yards. We did not dare to take them all out of the yards there, because we did not know what kind of propaganda might be picked up and worked against us. There is more propaganda gotten up against this thing than anything that has started, unless it is the U. S. Grain Growers. They have had their share of trouble along with the rest.

We stood twelfth among fifty companies at the end of the first week; at the end of the third week we got up to fourth place. We felt pretty good, but when we got up there we were among pretty fast company. It is just like in a horse race. It isn't much trouble to pass the bunch, but when you get up towards the front you have got to go some. I had estimated that in three months we would be in second place and in six months we would be in first place. Last Friday, at the end of our seventh week, we stood first over all the other fifty.

Now this success is not due to the supreme intelligence of this board of directors or anything of that kind. You men could have done just as much as we did under the same circumstances and conditions, but the credit is due to the confidence that the people out in the country had in their own people running their own business. They felt that they are the men to take hold of this commission proposition and put it over and they were willing to back them up, and the success of this thing is due to the confidence that the people had in them. They were willing to stand back of it. And the success is also due to the fact that it is organized on a solid foundation and along the right lines, or it never could have been so successful in such a short time.

As I say, we have had a world of trouble down there, but we have gotten by it. We have had a lot of propaganda to fight. I could go on and talk about that for quite a while, but I am inclined to think, from some of the meetings that I have been to, that the people want to ask questions, and I

find that quite often in a talk more is brought out in the discussion from the questions asked than the talk itself.

I want to say that the success of all of our farm movements—the farm bureau, the shipping association, the commission association, and everything of that kind—depends upon three things: Individual effort, organization, and team work.

ADVANTAGES OF COOPERATION.

Mr. ABBOTT: Will you go into detail now and tell the connection between the shipper and this commission house; where it is any better for the shipper than any other commission house?

Mr. FULKERSON: We have various kinds of shipping associations. We have the local shipping associations of Indiana. In some counties they are organized into county associations, a county association consisting of various local shipping associations in that county, and they are under one county manager. Part of the fees for shipping go to the shipping association and part to the managers. Now, then, by the shipping association patronizing their own market, patronizing their own commission company, they are benefited in this way: The terminal association charges just the same rate that the old line commission company does; then at the end of the year, after all of the expenses are deducted for operating that terminal association house, or that is left over the actual expense of running it, is prorated back to the shipper; whereas, in the old line house it goes down into the pockets of the company. Now that is the difference.

Another advantage in dealing with your own commission house is that: The old line commission companies charge \$16 a car commission for buying feeders—feeder hogs or feeder cattle, or stockers. Your commission company doesn't charge anything. They do that service for nothing. They go out with you and help you buy this stuff, or you may send them an order and they will fill it the best they can, just the same as an old line commission company, but they don't make any charge for it. It makes a better demand for their own stuff among their own people. When a man comes and buys a load of stock, takes it home and fattens it, and you have rendered him that service free, accommodated him in that way, nine times out of ten you have made a customer that is coming back with a finished load. We are simply overrun down there with orders for hogs. We have more orders for stockers and feeders than stock coming in to fill them with. We bought a load of hogs for Mr. Johnson at Bloomington the other day, and he said the only trouble was that we did not send him enough of them. I had a letter from him, saying one of his neighbors who was not friendly to farmers' organizations had placed an order with us.

There was a great deal of talk went out that we would not be able to do this business like the old line firms; we would not have the outlet they have. Week before last one of the biggest and the best old line companies in the yards, a company that sold stuff for me in days gone by—they are all gentlemen, try to be as nice as they can under the circumstances—had ten carloads of yearlings that they kept two days and could not sell. They sent a part of them to Chicago and a part of them east, because they could not get rid of them there. Now, if that would happen to the Producers Live Stock Commission Association, it would be all over the country and in all the papers, telling what a woeful failure this Producers Live Stock Commission Association had made, because they had ten carloads of yearlings that they could not sell. When it happens to any of these old line fellows you don't hear a word about it.

Then they say we make mistakes—we don't get as much for the stuff as we ought to. Sometimes we have kicks from the hog department; the hog salesmen there can't get the prices that the old line fellows get. Now, I have had this happen; and in my own town, where a farmer shipping through the shipping association sent in a load of hogs, and a shipper that bought and shipped stuff sent a load of hogs not a bit better than the farmer's and after our hogs had been sold, the shipper who shipped

to an old line firm got ten cents more for his. But they never told us how they took that off somewhere else. It came off of somebody, because the packers are just as friendly to us as they are to the old line fellows; if anything, a little more so, because they are trying to encourage us. The packers are trying to wipe out as much of this profit that stands in between the producer and consumer as possible. In other words, the packer is human. He wants to be the only fellow in between there. He can make more, he can pay us more and get it to the consumer cheaper by cutting out a lot of these unnecessary middlemen. This thing would not have been brought on, probably, or at least it would not have come on so soon if it had not been the fault of commission men. In Chicago there are 101 commission companies, 87 of them regularly established commission companies, and the others are regular commission men, doing business through these other offices. In St. Louis we have altogether about 50 companies doing the business that 12 or 15 companies could handle and handle properly. Now, then, these companies have all got to be taken care of. We farmers have been feeding them. It is about time for us to take hold of that matter and do a little of this selling ourselves and cut out a lot of the fellows that are not needed. Let them go out and earn a living and do something that will do somebody some good, instead of us feeding them all the time. Did I answer your question?

Q. Yes, sir.

AN EXAMPLE OF PROPAGANDA.

Mr. MILLER: There was quite an article that appeared in the Globe-Democrat some weeks ago in regard to some shipper in Missouri sending hogs to a commission firm, and the following Monday or so they were put on the market and brought two dollars more. Now, we fellows who are living out in the State know that that is propaganda, but that is mighty good stuff for these fellows to ring in occasionally. I would like to give you an opportunity to defend against something like that. Now we know there is something back of it; we know that.

Mr. FULKERSON: I would be very glad to explain this, and it will give you an idea of about how solid this propaganda is—how much is behind this propaganda that is put out. In the first place, there are two co-operative commission associations in St. Louis now doing business. The other co-operative commission company there is organized on an entirely different plan from what ours is. There are things in their system of organizing that don't appeal to us in the least; that we don't agree with. There are probably things in ours that do not appeal to them and they do not agree with. But we are not fighting each other, for the reason that the live stock commission companies down there would be tickled to death to get us fellows to fighting each other. It would be just nuts for them. They would not want anything better. We are just a little bit too smart to get into anything of that kind. After we get them whipped then we might, just for exercise, brush each other up; but right now we are not doing that kind of business. We are not knocking each other. As I say, there are these two different associations there, both of them co-operative. This propaganda that was gotten out was against this other company and not against us. For the reason that when that was pulled off we were just starting, and the people down there were centering their fire at this other company, because they were making them a lot of trouble. They started in about the middle of November and they had gotten pretty well to the top. They did not pay any attention to us, because we did not make a big start. As I say, the first day we did not do anything. When this propaganda was pulled off we were not considered worth noticing, therefore it was shot into this other commission company. We had nothing whatever to do with it. It isn't really our fight, but it was propaganda pure and simple, and it was pulled in just this way: In the first place, if those hogs were sold on Friday and then gotten back and sold on Monday, wouldn't it take some salesman to sort up all of that sausage and get it back into the original hogs and sell it over again? That shows

on the face of it that it was propaganda pure and simple. They could not have pulled a thing like that with marketable hogs—or, rather, commercial hogs—and it had to be pulled in this way: Some shipper out in the country, evidently—I don't know whether this is true, but I know that it could not have been pulled any other way—that stood in with some old line commission company shipped this stuff to this other company and they sold it for him on Friday to a speculator. Then they told him what they got for the stuff, and the shipper thought the matter over and told them that he wasn't satisfied with the sale and he wanted the hogs back. They never thought of the trick. They wanted to accommodate the man and they went to the speculator—not a packer—they went to the speculator that bought this stuff and they told him they would like to get this stuff back; they wanted to know whether this shipper could get it back. Of course, the speculator was in on the deal, and he says: "Why, yes. If he wants the stuff, let him take it back." They turned this over to the old line company. Then the old line company turned around on Monday and sold it for \$211.80 more, I think, than the stuff was sold for on Friday. The question is, who put up the \$211.80; whether it was a bunch of those fellows that got it up together and made up the price, or whether there never was a second sale made. It might have been just propaganda, pure and simple, but it made a very interesting article in the newspapers, both in St. Louis and Chicago. I think one of the market papers in Chicago put a frame around it. That is the whole story of that little frame-up.

Now, to go a little further. A week or two after that I happened to be in the office one day and a young fellow came in with a telegram. I noticed he was a little nervous. He said he wanted to know where the manager was. The bookkeeper told him the manager was out. He said he sold some sheep that morning and he had a telegram from his father stating that he wanted to get the sheep back; he wasn't satisfied with the sale. Well, now, as near as I could get at it, these sheep were sold by our company. They sold the lambs at thirteen and a half and sold the ewes at six and a half. Then the boy telephoned to his father out in the country, and the father telegraphed back that he was not satisfied with the sale and to recall the sheep. After the manager came back he asked him what about it? He said: "Now, here, just tell the people that the Producers Live Stock Commission Association never sells stuff but once. When it is sold it is sold, and that is the end of it. They had a chance to look us up. We have been doing business several weeks. They could find out whether we have been responsible, whether we are getting satisfactory prices. If they are not satisfied we are very sorry about it, but not to come back any more. If they find they were mistaken we would be very glad to handle their stuff in the future." The fellow came back in half an hour and wanted to get a job with us, wanted a job as yard boy. Since then we have had a load of hogs from the same man.

Here is the provision that is made there: The shipping associations over the country take out a membership in the terminal association. This membership is based on a dollar a car for the first fifty cars shipped during the last year, and fifty cents a car for the cars over that. They pay that into the terminal association as membership, and that gives the terminal association a capital stock to work on. Now, then, in order to take care of the men out in the west, where they do not have shipping associations, where they send great trainloads in—there are some men there that will ship in as much live stock in a year as some of our small county shipping associations—in order to take care of them we had to make a universal rule that any farmer or producer of live stock might take out an individual membership of ten dollars and ship himself.

DIVISION OF PROFITS.

Q. You spoke of the profit in the year. How do you divide that? On the basis of a number of animals, or how do you figure that?

Mr. FULKERSON: It is figured on the amount of commission paid in. For instance, we will say, just to make it easy; suppose at the end of the

year we have 50 percent to refund. If you shipped in a load of stuff and paid \$18 commission on your car, you would get \$9 back. It is figured on the basis of the amount of money paid in. A percentage of the amount of commission that you paid in would be refunded back.

Q. A shipper shipping in stuff would automatically become a member, wouldn't he?

Mr. FULKERSON: If his commission would be \$15 at the end of the year he would be a member and get \$5 back.

Q. Supposing a man isn't a member of the shippers' association. Does he have to become a member before he can ship to you?

Mr. FULKERSON: He can ship us a load of stock and at the end of the year, if he doesn't want to be a member, he gets one-half of his refund back. Anybody can ship to us. If he is not a member of the association, or not an individual member, he gets half of his refund back. He also gets the benefit of buying the stockers and feeders without the extra charge.

Q. Are you getting some shipments from individuals that are not members of the association?

Mr. FULKERSON: Oh, yes; we are getting a lot of them.

Q. If there are not any profits would the individual be assessed?

Mr. FULKERSON: No, you can't assess the members. They would just go out of business automatically.

Q. Who would make up the deficit, if any, in any year?

Mr. FULKERSON: If the thing wouldn't pay it would stop. That is one thing about organizing these terminal associations. The national board goes out and gets enough membership and ascertains if there is going to be enough patronage to support them. There isn't going to be any deficit. When a firm starts out and in seven weeks gets at the top of the list there won't be any deficit, because the people are behind it.

PRESIDENT MANN: We have one more speaker. When we wanted to know more about co-operative marketing we went up to St. Paul where there was an older organization. We went there and asked for Mr. J. S. Montgomery of the Central Co-operative Commission Association to tell us more about co-operation. Mr. Montgomery:

FARMERS IN THE COMMISSION BUSINESS.

(J. S. Montgomery.)

MR. CHAIRMAN, LADIES AND GENTLEMEN: The farmer has had two big problems, big fundamental problems to consider. One, the problem of production and the other the problem of disposing of his products after he had them produced.

The problem of production has received a great deal of thought, study and attention. We have heard it talked of, we have seen it written in all of our farm journals and agricultural press from one end of the country to the other. Our experiment stations have spent years and years in studying more efficient methods of production of all farm products, but up until recent years we have given very little, if any, thought to the problem of economical marketing. We have produced these crops and then we have sold them on a market that was owned, operated and controlled by the other fellow, and largely for the other fellow's benefit.

A former speaker told you some of the reasons why wheat recently has gone up thirty or forty cents a bushel. I will tell you a reason that I think is a lot more important, and that is the fact that most of the wheat in the country has gotten out of the hands of the producer and into the hands of the speculator.

We have seen the same thing happen every year, year in and year out. Everyone knew it and expected it was coming as soon as the big volume of the crop got out of the producers' hands.

The thing we have got to do is to study the business end of our business, to get organized in such a way that the man who produces this farm product gets a little larger percentage of the ultimate returns from it. That is the

important thing right now. That is the best answer I know of to the question of how to remedy farm credit, how to remedy the living conditions on our farms, how to improve our school systems and how to get men back on these farms, many of which are going to lie idle this year I am afraid. I don't know whether that is going to be the case in your state or not, but I know that in southern Minnesota and northern Iowa it is going to be a serious condition. I predict that a lot of the best land in that territory is going to be idle this year because the men on that land who have operated it for the past two years have operated at such a loss that they are no longer able to continue. I don't know how we are going to overcome that condition, but I don't fear over-production very much for the coming year when I know how much land is going to be idle in some of the good productive country a little farther north, and I imagine it is going to be just about the same condition in parts of Illinois.

I don't know if I can give any solution for this condition that is confronting us with reference to how to market our products, but I can tell you in a little while what we have done in Minnesota and the territory tributary to the South St. Paul market with reference to livestock marketing which we think has helped us a great deal in the past few months and promises to help us a great deal more. I believe that organization by the farmers into business bodies which will make it possible for you to handle your products co-operatively is going to be the solution that we are looking for.

CO-OPERATIVE SHIPPING ASSOCIATIONS.

With reference to co-operative livestock marketing, the history of that movement in our state dates back to 1908. In that year, at Litchfield, Minn., the first co-operative shipping association that I know of, or that is on record, was established. That is only a comparatively short time ago. At that time we had a condition in that territory, in that particular county in Minnesota, right around in the vicinity of Litchfield, where I am told there were something like thirteen local livestock buyers whom the producers of that county were maintaining as a means of getting their livestock from the farm to the terminal market. And the condition was very much the same in any locality that you wanted to go to in Minnesota. It was not quite so much true in the Corn Belt, I know, where farmers were producing their livestock in full carload lots on their own farm, but that is a condition that affects only a comparatively small area of this country. Wherever there was a smaller amount of livestock on the farms the livestock buyer was making it a business to buy this stuff and speculate on it, and the price he paid for it depended altogether upon the intelligence of the farmer he was dealing with.

The farmers in that locality got together and talked over the proposition and they said, "One man can do this work just as well as thirteen, and we will get the difference that the other twelve are getting." So they organized the first co-operative shipping association on record in this country. The thing was a success, and it has been a success since that time. Out of that town that shipping association has shipped nearly three thousand cars of livestock co-operatively, out of one shipping point since 1908.

The idea has spread. It was taken up by our universities, our extension force, our farmers institute force, other educational bodies, our farm press, and the idea has spread. It spread until today we have probably six or seven hundred active successful co-operative shipping associations in the state of Minnesota. It spread until last year seventy-five per cent of all Minnesota livestock that went on to the terminal market was sent there by co-operative shipping associations. So that you see we have the co-operative idea pretty well instilled into the people of that farming community in your neighboring state to the north.

THE TERMINAL MARKET SITUATION.

But that did not solve all of our marketing problems. We still had at the terminal market a condition which was exacting a pretty big toll for the service that the producer got there, and about seven or eight years ago we

got the shipping associations of Minnesota together and formed a sort of a federation to take up some of the problems that the shipper was confronted with at the terminal market. We figured that if we could pass a few laws that would correct some of the evils that the shipper met with at the terminal market that maybe that would do the job. We did get a few laws enacted for the benefit of the shipper, and it did improve his conditions on that market until the South St. Paul market has been recognized, for the last five or six or seven years, as being the best regulated livestock market in the United States.

When the Packers' Control Act was passed by Congress last year we had a very peculiar condition arising. At every market in the country excepting South St. Paul the livestock exchanges were fighting the Packers' Control Act. The South St. Paul market was fighting for it. Why? Because up there we had state regulation that was more rigid than anything provided for in the Packers' Control Act, and all of that legislation had been brought about by a little unified action on the part of our shippers in demanding their rights. But we found that with all the laws you would still have questions and propositions that you could not get away from, that you were paying a big toll and getting a little service at that market, and our shippers made up their minds that it was a difficult matter to work very many miracles for the farmer with legislation. They decided that if they were going to improve their conditions they would have to get together and do some of the work themselves.

With that in view last April a meeting was called of all our co-operative shipping associations of the state of Minnesota. Something like 150 of them responded with delegates. At that meeting the ground work was laid for what is now known as the Central Co-operative Commission Association. A board of directors composed of farmers was elected. Articles of incorporation were adopted and that board of directors were given authority to establish on the South St. Paul market a co-operative selling agency.

Why did they want it? We had on that market thirty-five commission firms and twice that many firms of speculators and dealers, with a total of something like one thousand employees to handle the business of selling the farmers' livestock. Think of what a great big, cumbersome, unnecessary, expensive and extravagant organization that was to handle that business. And the worst of it was that our producers found that in many cases they were not getting square treatment when they got there. I am not condemning the commission men. There are some of the best men engaged in the business, some of the best friends I have that are in there. The fact remained that conditions grew up around those terminal markets that were built up for the benefit of everybody except the producer in every step of the game, I don't care whether he was buying or whether he was selling, he was paying the bill, he was the goat, and there was nothing there for his benefit.

Six weeks after that organization meeting in April we had covered the state of Minnesota. Our board of directors had elected Mr. W. A. McKerrow, who unfortunately for us died a short while ago, as general manager. While he was building up the organization to handle the business at the yards I took charge of a group of men and we covered the state of Minnesota, and in six weeks' time we had the promise of enough business to make us twice as large as any other commission firm in the South St. Paul market. With the promise of that business we felt we were justified in going into the market and employing the best salesmen that could be secured, and that was our next step.

ORGANIZATION AND RESULTS.

Now to give you a little idea of the success of this thing I would like to go into it in a little more detail. I want to give you in just a brief word or two the plan of organization. It is a little, simple thing, organized on a co-operative basis, twenty-five thousand dollars of capital stock which is sold not to the individual but to the local shipping association. The individual cannot buy the stock. The control therefore is always in the hands of the

producer represented by his local association at home, and there is where the voting power is. It isn't open so the individual can step in so the few fellows around the terminal market could buy the controlling interest in the stock so that it could be co-operative only in name. It is organized in such a way that after paying the expense of running the business and paying interest on the money invested that any and all profits are pro-rated back on a patronage basis at the end of the year. That, in just a few words, is the plan on which the association is organized.

Now, I want to tell you a little something of what we have done, just in a few words. We were open for business on the 8th day of last August, and the first week that we were in the yards we became the largest commission firm of the South St. Paul yards. There never has been a day since the day we opened for business that we have not had more business than any other firm in the yards. We handled 442 cars of livestock in August, 700 cars in September, 1,100 cars in October, 1,292 cars in November; in December we had a strike that practically closed our yards for a week, we had two holidays and handled 888 cars. In January we came back up to 1,260 cars, which was 24.8 per cent of all the business of those yards, with 33 other firms competing for the business. That is what the co-operative organization there has done.

We have had all kinds of propaganda sent out against us. The people that have been engaged in the business there were ready to fight. That was just human nature. We were stepping on their toes a little bit. We were taking hold of a business which they seemed to feel they were preordained to handle. They seemed to think they had an absolute right, that nobody had any right to come in there and say anything about it. I want to tell you some of the things they attempted to do when we went in there. A few days before we opened for business the livestock exchange members got together and said to the speculators and dealers on the market, "If you buy a hoof from these 'outlaws' (as they called us) you cannot again buy from any member of the exchange." Now what was the purpose of an order of that kind? They knew that we were going to have a lot of business to start on and they figured that they could keep the speculator from buying from us. They thought we would be eliminated, be out of business in a week. They gave us "just a week to live" when we started in there. Fortunately for us, the farmers in the Corn Belt had gotten themselves pretty well organized into farm bureaus and things of that sort, which gave us an organized medium through which we could work. We sent word through all the county agents to the farm bureaus in the cattle feeding country, and to all the feeders we could get in touch with. We said, "On the 8th day of August we are going to open for business. We expect to have a lot of stockers and feeder cattle. We expect to sell them directly to the man that wants to buy them without adding any speculator profit to them." The first day we opened for business we had a buyer there for all the stockers we wanted to sell. He could not get a full load from us, so he went to a commission man's office and he said, "I want to buy a few cattle." The commission man said, "You bought from the outlaws this morning, didn't you?" He said, "Yes, I bought some from them." "You can't buy any cattle in this end of the yard." I don't want to tell you what that buyer told him, but he told him where he could go. And he told him he thought he could get all the cattle he wanted from those yards and he didn't have to deal with any member of the livestock exchange.

That was the beginning, and I want to say to you that there never has been any time when we have suffered for buyers. Within the last three weeks I have had several of the largest speculators in the South St. Paul yards come to me and get right down on their knees in my office, or pretty nearly so, and say, "Won't you let us come down and buy some cattle?" I said, "Yes, sir, we are conducting an open market down there and any time you want to come down and pay more money for these cattle than they are worth to the outside buyer you can buy them." They said, "No, we don't want to come that way. We want the assurance that when we come down there you will let us have some cattle whether there is some outside man

wants to buy them or not." I said to those men, "No, your viewpoint and mine are different. My idea is that the outside buyer or producer who wants the cattle to feed is the man who has got the first right to bid on them. If you are willing to compete with them you are welcome."

That is the principle we are doing business on, and the speculators haven't come down because we haven't needed them. It is the Illinois feeders, the Iowa feeders and the southern Minnesota feeders who have come there and been our patrons.

They have sent out stories broadcast that we could not get the price, we were giving the stuff away. There is no way to disprove that statement except to come there and look at the books and compare them with the markets, and anybody, except our competitors, are welcome to do so. They are open at all times to any producer who wants to come and look at them. But I want to say to you that I don't believe that we could hold twenty-five or thirty per cent of the business of that yard day in and day out, week in and week out, if we were not getting full market value for the livestock. That is the best evidence I can give you people that it is possible for a co-operative organization to go into the market and sell the stuff just as high as anybody can sell it if you will just organize properly and be sure that you are going to have a fair supply of livestock coming in all the time so that you can afford to hire the best sales talent in the yards.

Now what are the possibilities with reference to sales by this co-operative handling? I don't know how much we have saved on speculator cattle; I do know that when we started hiring men last year one of the speculators in the yards came to us and wanted a job as cattle salesman, and he took the president of our organization into his office, opened up his books for a year's business and showed him what a good cattle man he was, and the books that he presented showed that his profits for one year as a cattle speculator were many thousand dollars. Now, I don't know whether there are many speculators making that much money, but I know some of them must be making pretty good money or they would not be living and driving big cars, and all that sort of thing, as they are. I know that when we spread the stocker and feeder business in our yards over forty to sixty firms that they have got to make a pretty good profit on every hoof that they handle to even exist, to say nothing about laying aside any money.

We have done as much business in the stocker and feeder line, I think I am safe in saying, as any ten speculator firms in the yards since we started. Now, that is the only estimate I can give you as to what we have saved along that line. But I do know this, that from the time we started we operated for an average of twenty-five per cent less commissions than the old line firms were operating on. Our Railroad and Warehouse Commission was given authority to reduce commissions. They issued an order. That order was enjoined in court. It has been in court for pretty nearly a year now. I don't know how much longer it will stay there. We could not get any results in that way. We cut out commissions twenty-five per cent below what the old line firms were charging.

THE FINANCIAL SIDE.

Working on that basis, on an investment by the farmers of \$16,775, we returned to them at the end of 1921, after a little less than five months' business, over \$19,000 as refund, as interest on their investment and as refund on the commissions that they had paid us. Is it worth while on an investment of \$16,775 to return about \$19,400 in five months? Is it a pretty fair kind of investment from the standpoint of the farmer? Our books for January alone show that after paying all of our salaries, office rent and other expenses, and operating on a commission that is now about 15 percent less than the old line firms, because they cut it the first of the year to try to get back a little business, we had a net profit of \$12,400. That money is held there as earnings that belong to the farmers. Is it a worth while proposition? Do you begin to understand why the commission man has always liked to see you come in? Why he always felt that he could meet you with a smile and glad hand? You begin to understand it, don't you?

Here is another interesting fact that very few people realize. When we opened for business we had available \$12,000, and we have never touched a nickel of it from the day we opened our doors. After we bought the office supplies, the supplies to start, we had \$12,000 left available, and we have never touched a nickel of it. The commission man has always operated his business on the other fellow's capital. If he can be sure of a reasonable flow of live stock all the time he doesn't need a nickel's worth of capital.

Our daily bank balance for the first twenty days of January averaged \$127,400 and was never at any time below \$60,000. Practically all of it money that was paid in for live stock sold by us that we had issued checks out against. Do you see how it is possible for the commission man to have a little side line here, and everyone who is in the speculating business, who buy and sell your cattle and speculate on them? We could have safely taken \$60,000 of that money and invested in stuff that we could turn over in two or three days' time. That is the best of the commission business that the average fellow has never thought of. He never has realized that he was not only furnishing the commission man his business, but that he was furnishing the capital to operate it on. That is what we have shown absolutely in the conduct of our business.

STOCKERS AND FEEDERS.

Now, with reference to the stocker and feeder cattle. We get lots of that, of course. We try to sell every hoof of that directly from the man that ships them into our yards to the feeder from the corn belt that wants to buy them. If we cannot do that today we place a valuation on them at just what we figure they will bring. We will turn them into our department known as the stocker and feeder department. The man that operates that department takes them in there at every nickel he thinks he can get out of them. It is comparable with the way the speculator does his business, with this exception, that we figure on handling that business on a cost basis and he figures on handling it so as to make all he can out of it. That department we have operated for the last six months. Up to date we have lost a little bit of money on it, but that is just as the books stand at present. Possibly another month or six weeks it may work out a little bit the other way. It has been our plan to operate that department absolutely on a cost basis, not making a profit on it, but giving the outside man who wanted to buy these cattle the benefit of eliminating the speculator profit, and giving the man who brought the cattle the benefit of the speculator profit, or his share of the speculator profit. That, gentlemen, will mean a good many hundred thousand dollars a year, and all of the stocker and feeder cattle what go through that market could be handled in that manner.

THE HOG MARKET.

There are a few other things that are of interest. Take the hog market, for instance. We are developing at South St. Paul one of the largest hog markets in the country. There are many days when we have more hogs on the South St. Paul market than we have at the Chicago market. Producers have come in there and said: "Well, we can't ship to you, because it is impossible for a man to give the service when he has so many hogs to sell." Our hog salesman has handled as high as 7,000 hogs a day. A week ago yesterday we had 7,200 hogs in our last run out of 20,000 on the market. My answer to those fellows has been this: "Do you realize that a packer buyer has to do his work just as carefully as a salesman? Do you realize that it isn't uncommon for a packer buyer to walk into the market and buy 10,000 or 12,000 hogs a day, one buyer alone? If you get a salesman that has as much brains as the packer buyer, there is no reason why he can't sell just as many hogs as one packer buyer can buy." Then they say: "Well, he doesn't have the time to spend on them. He don't sell them as high, because he doesn't have time to spend on them." Did you ever stop to think that when one man had all the hogs on the market to sell and there were five buyers trying to buy them, that the salesman had the point of advantage;

and that, on the other hand, when you have four or five buyers and forty or fifty hog salesmen, that the buyer has the point of vantage? That is a business principle that you can't get around, which you all know, if you have done any trading.

The condition has gotten to the point now at the South St. Paul market that every commission man is afraid to price his hogs until our salesman has sold, and he is absolutely setting the price of hogs on that market. I would not say he could set that price very much higher than it normally should be, but I will say this: If you will take the South St. Paul Reporter and study the hog market for the last five months as compared with any other five months in the last ten years, you will find that the price of hogs has been closer to Chicago market for the last five months than for any previous like period. We have sent a good many of them to the New York packing plants and other places. We have had an outside buyer all the time. When the outside buyers found that there was an organization on that market which was on the square that they could buy their hogs from, we have had no trouble whatsoever in getting the orders.

Now, I want to say to you that that can be true of any producers' organization that will get together and have the right kind of management and get organized, so that their business can be operated on the square.

THE PRINCIPLE IS RIGHT.

Now, then, when we carry this thing just one step farther, you have all heard of the Committee of Fifteen. You all know, probably, of the producers' organization that has been started at St. Louis. I don't know so much about the fundamental plan on which they are organized; but I know this, that if their groundwork has been properly laid in the country before they started and if they have got honest men at the head of it the thing will succeed, because the principle is right and you can't get away from it.

When you get an organization of that kind at each and every one of the principal markets, and get them built up to where they are controlling a third or a half of all of the live stock, or possibly a higher percentage than that, of all of the live stock that comes into those markets, then you begin to get where the producer is somewhere nearly on an equal footing with the man that he is trying to deal with.

That, it seems to me, is the condition that ought to be brought about. It is the condition that we ought to be working for. It is the condition that we must have if we are to continue to operate this business and continue to exist as a farming population. And I want to say that I believe the answer to our problem, I believe that the means, and the only means, of bringing about those conditions is through cooperative marketing.

I thank you.

THURSDAY AFTERNOON SESSION.

February 23, 1922, 1:30 o'Clock P. M.

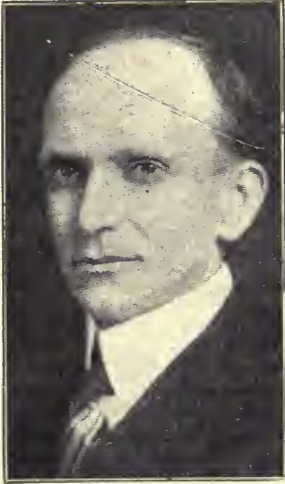
Girls' Glee Club.....Monmouth College
Vocal duet.....Doris and Dorothy Sites

PRESIDENT MANN: Mr. Thorne, whom we fully expected to be here, was called to Washington and had to send his assistant, Mr. W. R. Matheny, who will present Mr. Thorne's discussion of the subject, "Organized Agriculture and Its Problems."

ORGANIZED AGRICULTURE AND ITS PROBLEMS.

(Clifford Thorne.)

During the past year there has been a world wide depression, affecting practically all lines of industry. The farmer has shared in these conditions. In this country he has probably suffered more than those engaged in most



Clifford Thorne.

of the other lines of activity. The situation in American agriculture today is probably worse than that which has existed during any previous year of the present generation. In stating that fact, we must not forget that 500,000 railroad employees have been discharged and deprived of their daily means of livelihood during the past year, while you still have the means with which to get your food and most of the necessities of life. We must not forget that there are millions of people in China, in Russia, and in other countries that are literally starving at the present moment; and we must not forget that the army of the unemployed even in the United States runs into the millions.

Today we are passing through that after-the-war reconstruction period which follows every important struggle. It followed the Napoleonic Wars in Europe; it followed our War of 1812; it followed the Civil War; and a similar condition of affairs has followed every other great war in history. I am not one of those who can be classified as pessimistic. This is only a temporary situation. It is only a

question of a few months or a few years until conditions will be substantially restored as they were prior to the war. But it will be a mistake if we let this experience go by without learning lessons for the future. It is during times of readjustment, when we apply the acid test to methods and policies of the past, that great progress is generally brought about. Let us make a sort of appraisal of things as they are and as they have been to see what lessons we should learn for our guidance in the future.

The production, transportation and sale of farm products and your purchases of the necessities of life constitute the grand divisions of the questions confronting you. In this discussion I can only touch upon a few of the outstanding facts.

A PROBLEM OF PRODUCTION.

First, as to production: It would be folly for me to offer suggestions to you practical men as to what improvements you can make in the production of your products. But allow me to make just one brief suggestion. The manufacturers of the country are organized into large units; they study developments in this country and throughout the world and the probable demand for their products in the future. As a rule, the farmer has relied too much upon his own personal choice and his individual experience as to what he shall produce and what he shall not produce. The day has come when he must collectively, with his associates, study, through the very best experts obtainable, the world conditions, the tendencies of the times, what other nations are producing, and what are the probable consumptive prospects in this and other countries for all the principal crops. This is all true, and yet you should not form an exaggerated impression of the necessity for control of production. We find that the average production of livestock in this country per capita thirty years ago was over 30 per cent greater than it is today. We find that the production of grain per capita forty years ago was

practically what it was last year. Nevertheless, we must recognize and study the significant changes in production and consumption of our farm products in this and other nations, and we must not be wholly dependent upon governmental sources for our information. The Standard Oil, the Steel Trust, the International Harvester Co., the great grain merchants, the packers, and the large manufacturers select strong, capable experts of their own to gather and to interpret the very latest and best information obtainable throughout the world on those commodities in which they are concerned. If the farmer shall exercise proper intelligence, he will adopt the same course of action. This does not mean necessarily the reduction of production, but it does mean possibly a more diversified character of production and selection of the commodities which you will raise and sell.

The Department of Agriculture has rendered invaluable service along these lines, and during the past year your authorized representatives have helped to place additional facilities in the hands of the Secretary of Agriculture for this very purpose. Incidentally, in this connection, I want to say that last winter, when we appeared before the House Committee on Agriculture we secured a statement from the Department of Agriculture to present to the committee concerning the control over news gathering agencies throughout the world that organized business has built up through our government, compared to that which agriculture had obtained. We found that the Department of Commerce had 28 representatives; the Department of State had 43 representatives; and there were 626 in the Consular Service. The following is a direct quotation from the letter from the Department of Agriculture:

"We have no men in foreign countries selected to collect crop, livestock, or trade information. * * * Through other departments, we *do* get information, but these foreign representatives are not in the employ of the Department of Agriculture and are not trained or experienced in the agricultural industry."

Recently a substantial sum has been appropriated to the Department of Agriculture for the building up of more efficient news gathering agencies throughout the world; and this important branch of the public service is being ably developed under the guidance of Mr. Secretary Wallace. Never in the history of the world has there been a more efficient organized effort on the part of the government and of organized agriculture to give practical assistance to the farmers along the line of a more intelligent and efficient production of farm products. And yet you are far, far behind organized business in the intelligent control of your production.

TRANSPORTATION PROBLEMS.

Second, as to transportation: Next to agriculture, the greatest industry in the United States is that of the railroads. If it should cost as much today to move a ton one mile as it did a century ago, your transportation cost would be approximately sixteen times what it is today. That marvelous change has been brought about by some revolutionary inventions and developments in the industry. But in the same breath, I want to add that it costs as much today to ship a ton one mile as it did forty years ago.

In other words, so far as the benefit to the public from these phenomenal developments in inventions, the economies effected by the large consolidations of railroad systems and the improved methods of operation is concerned, we have made practically no progress in the last forty years. And yet, during that forty years, we have built practically three-fourths of the transportation system as we see it today. There has been built up on American soil the greatest transportation facility upon the face of the earth. The railroads distributed partially the benefits derived from invention and other methods of progress in their industry for many years. The forces of the government and the forces of society and commerce compelled this result.

THE RECORD OF REGULATION.

Have we had too much regulation? Let us consider one or two facts: Conditions since the world war have been abnormal in all industries. When the railroads were taken over by the government at the beginning of the war, after thirty years of regulation, they were making, above all expenses and taxes and interest on debt, a rate of return on their capital stock outstanding in the hands of the public, approximately *double* what it was when railroad regulation commenced thirty years ago. They were making practically double the amount per mile of line which they did when the Interstate Commerce Commission was created. Their total net earnings above all operating expenses and taxes during three years ending with 1917 were practically three times what they were thirty years ago. And the average amount earned on the capital stock outstanding in the hands of the public was practically double what English railroads were earning.

During the three years ending June 30, 1918, the last three years of governmental regulation before the carriers were taken over by the government, American railroads earned on an average the largest net earnings above all expenses and taxes and the largest rate of return on their property investment or book value which they ever earned since the steam engine was invented, so far as records have been kept.

In the light of such a record as that, no man can honestly claim that we have had too much regulation. The great question is—have we had enough regulation? Have the railroads obtained control over the powers that we have set up to control them? That is the great issue.

WHAT HAPPENED DURING THE WAR.

Now let us consider briefly what transpired during the war period. Every other great nation on earth either owned its railroads or took over the control and operation of its railroads at the beginning of the World War. The United States was practically the last great nation to take this step. The war necessity demanded it.

But when we took our carriers over, we immediately placed them under the control of railroad men, but we required consolidated, unified activities. In his address at Omaha on June 10th, 1919, Mr. Hines, director general of railroads, made the following statement:

"I want you to remember this fact. When the government took possession of the railroads, not a single railroad was put under the direction of a man who was not a railroad man. Almost without exception every railroad was left under control of the very same operating men who had controlled it under private operation, and when the present government control ceases and the railroads shall be turned back to private management, these same men will continue to control the railroad operations."

There were some national policies which the central administration, also composed of railroad men, required these operating officials to adopt. When we took over the roads we guaranteed—regardless of how high labor costs should go, and regardless of how high the price of materials would reach—we guaranteed the railroads a net income over and above all expenses equivalent to the average of the most prosperous three-year period in their entire history. During that period, when some folks profited and other folks went broke, when all industry was centered on war activities, during that period of great change and hazard and uncertainty, we gave the carriers the equivalent of a government bond equaling their net income for their most prosperous period. And at the close of the war, when everybody else was forced to reduce their charges, at a period when American industry was trying to readjust itself in getting back to normal, we deliberately authorized these same railroads to increase their prices, attempting to give them one billion, five hundred million dollars through increased rates.

EFFORTS TO CORRECT BLUNDER OF 1920.

In order to thoroughly appreciate this stupendous blunder which was made in 1920, I want to recite a few salient facts.

In spite of the provision of the law known as Section 15-A of the Interstate Commerce Act, we were finally able to persuade the Interstate Commerce Commission that railroad rates must come down. Great credit is due to that tribunal that it withstood the demands of the carriers of this nation, backed up by some of the greatest leaders in commerce and in the editorial chairs of our great newspapers and magazines. In spite of this powerful influences, the Interstate Commerce Commission required the railroads to reduce the freight rates on the long hauls on livestock and to reduce the rates on grain and hay, although the railroads were not earning what Section 15-A attempts to insure them.

We then filed a petition for a general reduction of from 10 to 20 per cent on all farm products. The petition rested in the hands of the commission for several weeks, but before it was given a docket number the railroads came before the commission and agreed to a voluntary reduction of 10 per cent on all basic farm products throughout the United States. This was a moral victory on the part of agriculture, and it was a great concession on the part of the railroads. There are some big, strong, far-sighted men in the railroad industry who finally recognized the justice of our claims. I desire to review briefly the part played by the American Farm Bureau Federation in securing these results.

Last March we recommended to the executive committee of the American Farm Bureau Federation that we should file a petition with the Interstate Commerce Commission asking for a general reduction in the freight rates on basic farm products. The finances of the federation did not permit the trial of such a case. So it was decided to adopt the following course of action:

First, present a memorial to the President of the United States, to Congress and to the Interstate Commerce Commission, demanding a general reduction.

Second, call a national shippers' conference, in order to persuade other industries to unite in this demand.

And, third, join with other organizations handling individual commodities to help them get reductions on the basic necessities of life.

Mr. J. R. Howard, president of the American Farm Bureau Federation, presented the memorial to the President and to the Commission. We joined with the National Live Stock Shippers' League in obtaining the reduction on live stock, and we joined with various state railroad commissions and the Farmers' National Grain Dealers' Association in getting the reduction in the rates on grain and hay. The trial of that case alone lasted three weeks. The order of the Commission required a reduction of forty million dollars annually, the largest single reduction ever ordered by the Commission in its entire history.

Mr. Howard was invited to meet with a committee for a conference with representatives of the railroads and of industry in regard to a general reduction in freight rates. The conference was held at New York. Mr. Howard insisted on an immediate reduction of 10 per cent, with subsequent reductions as fast as lowering of operating expenses would permit. A sub-committee of the executive officers agreed to this program, but later at a general conference held in Chicago on October 14th, the railroad executives representing over 90 per cent of the mileage in the United States declined to adopt the suggestion. Therefore, the American Farm Bureau Federation finally decided to file the petition with the Interstate Commerce Commission, which I have briefly described.

As previously stated, the Commission did not file the petition, but gave it a docket number for several weeks. In the meantime the railroads came before the Commission, agreeing to put in the 10 per cent reduction, thereby reversing their former policy. After this concession before the Commission the railroads and representatives of shippers and manufacturers held other

conferences in Washington, at which certain legislative matters were considered. There have been some charges and counter charges concerning what transpired at these conferences. We cannot believe, however, that the officials of the Federation have knowingly done anything wrong. We have found the leaders of the Federation to be a magnificent set of men, with a high sense of honor. At times there have been differences of opinion, but in the end on every basic policy there has been harmony amongst your chosen leaders. From time to time, as the years go by, you men must expect attacks and counter-attacks upon your organization. These things are inevitable if the Federation exerts any influence in American life.

THE PRESENT SITUATION.

Today there are three important problems in the transportation industry confronting us:

(a) What further reductions, if any, shall be ordered by the Interstate Commerce Commission? In this connection you are interested in the freight rates on many commodities that you consume. We hope that the tentative reduction which will expire July 1st will be made permanent. We hope that as fast as further reductions in operating expenses are effected, freight rates shall be reduced accordingly until the entire advance of last year has been eliminated. The Commission is compelled, by the Interstate Commerce Act, to determine what is a reasonable rate of return to which the railroads are entitled after the first of March. That issue is now pending and up for decision in this general subject.

(b) The valuation of all of our railroads, which has been in progress for eight years, is now rapidly nearing completion. The final conclusions on this subject will control the level of freight and passenger rates to be paid by this generation and future generations. That industry which bears approximately one-half of the transportation burden of the country should certainly participate in these important proceedings.

(c) There are some important amendments to the present railroad legislation that should be secured. The railroads are trying to concentrate all regulation in the hands of the central government. In my judgment, too much centralization is just as dangerous as too much decentralization. Our Fathers, who framed this government, conceived a great system which should combine local home rule with a powerful central government. The state is far closer to the needs and demands of the local community than a tribunal a thousand miles away from home. On the other hand, the national government is far better equipped to protect us from enemies abroad and to compel peace at home. It is this check and balance, this dual system, this federal system of statecraft which constitutes the greatest achievement in the science of government in the history of the human race. A tendency towards too much decentralization brought on the Civil War; a tendency toward too much centralization will result in a government by clerks, an incompetent bureaucracy, which will ultimately undermine and destroy the very government itself. We must preserve for posterity this great federal system which has stood the test of more than a century and which other governments today are adopting. Long ago England adopted this principle as to Australia, Canada, and other parts of her Dominion. Today she is being compelled to adopt it as to Ireland.

A QUESTION OF FUNDAMENTALS.

If it is wise to abandon this dual system of government as to our railroads, it will only be a question of time when other forms of organized business will succeed in doing what the railroads have accomplished. This proposition strikes at fundamentals; it has to do with the method of government. What is it that distinguishes the United States amongst all nations? Is it because it is a republic? No. There were republics centuries ago. Is it because it is a large central power? No. There have been larger and stronger central governments. That which makes the American scheme

of government unique in all history is the federal system, combining local home rule with a great central power.

Too much "nationalism" is just as wrong as too much "states' rights". There is a happy medium.

It is not this government as one nation, nor the several states, but the combination in a federal plan that has given such a distinct contribution to the welfare of humanity. It is this federal plan that must be most jealously guarded. A tendency, one way or the other, toward centralization or towards decentralization, is dangerous.

It must be expected that, from time to time, there will be strong men, men who are ambitious to leave distinguished names in history, who will champion a powerful, centralized government in the United States. There always has been, and there always will be, a dramatic attraction in the building of great empires about a central authority; the glory of power in a supreme authority interests and awes even those who are governed.

The strength of nations does not lie in the vastness of the territory under one highly centralized and supreme authority. This truth has been centuries in the learning.

That government which hugs closest to the sober and mature judgment of the people, and keeps in touch with the demands of changing conditions, is the one which best fulfills its mission and which will live the longest. The makers of government must set as their goal, not the creation of an extensive centralized machinery, but a human organism, capable of reaching out, and searching after, and meeting the demands of life.

CO-OPERATIVE MARKETING PLANS.

Now, as to the sale of farm products: During the past thirty years we have witnessed an enormous development in the organization of labor and business. We have seen some remarkable developments in the railroad industry, public utilities, steel industry, manufacturing industries of all kinds, and amongst the laborers of the land. These facts are common knowledge. The farmer has been the slowest to engage in organized activity in the sale of his products. We have developed here in the Grain Belt local farmers' co-operative elevators. There are over 4,000 of these elevators owned locally by farmers. This co-operative grain movement probably handles a larger volume of products than any other form of co-operative activity in the world. But very rarely have these elevators gone beyond the country station.

A year ago last July, Mr. Howard, of the Farm Bureau Federation, called a national conference to devise an improved method of marketing grain. A Committee of Seventeen was created to make an appraisal of the co-operative marketing methods that had been developed, with instructions to prepare a plan that the grain producers of the country might adopt. If you were appointed on such a committee, what would be the method of investigation that you would choose? Would you go off in a corner and conceive a plan, developing it out of your inner consciousness? Here was the possibility of an organization which, if successful, would probably do a business aggregating several hundred million dollars annually. The Farmers' Grain Marketing Committee of Seventeen undertook, first, to make a comprehensive review of the methods which have been proved to be successful by co-operative organizations throughout this country and Canada. They invited before them such a man as Julius H. Barnes, who was the head of the U. S. Grain Corporation during the War; Mr. George E. Farrand, General Counsel for the California Fruit Growers Exchange; Mr. Bayne, representing the Agricultural Commission of Canada; Mr. Bernard M. Baruch, the head of the War Industries Board during the World War; a representative of the cotton industry of the South; and Mr. Aaron Sapiro, representing certain fruit organizations of California; all of these men addressed them. Mr. Gates, former president of the Chicago Board of Trade, was one of their guests. A corps of experts were employed to gather data. Sub-committees were appointed to investigate at first hand the actual accomplishments of other co-operative enterprises. All of the co-operative contracts which were then in

effect in any part of the country were gathered together. A review was made of the co-operative statutes, and of the decisions interpreting and applying these statutes. Papers were drafted and submitted to a committee of attorneys, consisting of the Honorable Frederick W. Lehmann, former Solicitor General of the United States; Mr. J. H. Broady, former member of the commission appointed to recodify the laws of Nebraska and of the Commission appointed to draft a suggested constitution for the state, and an attorney for various co-operative organizations in that state for many years; Judge John G. Park, former Judge of the Circuit Court in Kansas City, also Corporation Counsel for Kansas City; Mr. George E. Farrand, General Counsel for the California Fruit Growers Exchange and other fruit organizations on the Pacific Coast; Mr. Aaron Sapiro, of San Francisco, attorney for the Raisin Growers and Prune Growers, and a number of other co-operative organizations; and Mr. Thorne who acted as chairman of the committee. This committee devoted a solid week—working day and night—to a review of the papers which had been drafted. The proposed contracts, charter and by-laws were then submitted to a ratification conference at Chicago, delegates to which were selected from the principal farm organizations in every state of the grain belt. After a two days' session, this convention unanimously adopted without change the recommendations of the Committee of Seventeen.

I have reviewed these facts simply for the purpose of showing to you the great care taken to devise a plan that would prove workable and safe. At the present moment the U. S. Grain Growers, Inc., is authorized to transact business in the twenty-one leading grain states of the country. It has a membership of over 48,880, and has contracts covering the grain of these farmers totalling almost one hundred million bushels annually for the next five years. Today it is probably the largest co-operative enterprise ever launched.

The first annual meeting, or "National Convention" of this corporation will be held in Chicago on March 21st. Immediately after this it is expected that a national sales agency will be established and the corporation will begin the transaction of business. At that time it will probably have under contract over 100 million bushels of grain, constituting perhaps the largest single grain corporation in the world.

Co-operative marketing committees have also been created by the Farm Bureau to devise plans in the live stock industry, the cotton industry, the fruit and vegetable industry, the milk industry, and various other businesses. Other marketing organizations have been created for the collective selling of agricultural products.

Mistakes will undoubtedly be made. There has been only one man who never made a mistake, and they crucified him. But if you farmers have the courage to swing together, if you have the foresight to select able, broad gauged, far sighted men to transact your business, we firmly believe that, within the next few years, the agricultural industry will be organized for business purposes as never before in our history. Similar organizations for the purchases of the prime necessities of farm life must be made.

What are the reasons causing the wide spread between the price the farmer receives and the price the consumer pays? First, there is the lack of adequate storage facilities; second, the lack of adequate credit; third, the lack of adequate news gathering agencies and absence of collective bargaining. These functions must be performed by organized agriculture if results are to be accomplished.

BETTER CREDIT FACILITIES NEEDED.

The creation of agricultural credit institutions under the ownership and control of the farmers themselves must be effected. Existing governmental agencies must be revised so as to meet the needs and requirements of the agricultural community.

The head of a large banking institution in Chicago has made the following statement:

"In a period of the greatest stringency ever known in the rural districts, the Federal Reserve System, with its six billion of assets, held less than 4 per cent of its assets in agricultural and live stock paper. Now, it is said that 54 per cent of the total deposits of the country originate in these small rural banks. On that basis they should be entitled to at least one-half the loanable funds of the Federal Reserve System, or three billion instead of the 230 million of livestock and agricultural paper held by Federal Reserve banks on July 31, 1921, and, based on proportionate part of wealth of the Nation, they would be entitled to over two billion of credit."

Such a condition of affairs is inexcusable. You are furnishing the credit for other people to speculate with. You are furnishing the credit for other people to make the middlemen's profits. The present financial legislation is devised to help establish long-term credits. This is taken care of under the Farm Land Bank Law. The bulk of the banking of the country is done on 30 to 90 day paper. In order to constitute agricultural paper certain specific requirements must be met and even then the longest time is six months. Where the average turnover in an industry is a year and the turnover extends over a period of three years, as it does in the live stock industry, there is something lacking,—there is a hiatus in our financial legislation. We must take care of that paper which is not the short term paper nor the extremely long term paper. We believe the achievement of this result constitutes one of the great tasks ahead of us. The establishment and maintenance of a more adequate agricultural credit is one of the problems before the American farmer at the present time.

PRODUCTION COST IMPORTANT.

I should like to discuss briefly that old, old problem that we have inherited from our grandfathers—the tariff question—but time forbids. Suffice it to say that you farmers must prove to the officials at Washington the difference between the cost of production at home and abroad. That is what the manufacturer does; that is what he has been doing for the past fifty years when tariff laws have been framed. The farmers, collectively, have never undertaken that task in a systematic, business like way. Unless you do this, you cannot expect to be protected against the low priced lands and miserable living conditions of foreign nations.

At the present time there are many groups, many organizations of farmers, appealing to you for their support. Many of these are officered by honest, able men. I shall not indulge in any attack on any group of organized farmers in this state or any other state. By the slow processes of experience you will learn whom you can trust.

WHAT ORGANIZATION HAS ACCOMPLISHED.

In conclusion, I desire to review briefly some of the achievements of organized agriculture:

First. During the past year you have helped to write upon the federal statute books a law providing for the federal regulation of our grain exchanges. That is just as momentous an event in the history of the grain industry as was the original enactment of the Interstate Commerce Law in the railroad industry. It is for the same purpose; regulation. For the first time in the history of our people we have provided for government regulation and control of these great public market places.

Second. For the first time in the history of the United States we have a law providing for the governmental regulation and control of the live stock exchanges and the packing industry. The American Farm Bureau Federation did some strong, forcible work in connection with the enactment of this legislation.

Third. Organized agriculture has helped in the establishment of the famous Agricultural Bloc which has so vigorously supported agricultural measures.

Fourth. You have helped to secure the first general reduction in the freight rates on any basic commodity throughout the United States that has ever been obtained in the history of American railroading, a reduction which will save the farmers of our country approximately one hundred million dollars annually.

Fifth. You have helped in a marked degree to prevent the enactment of a sales tax as a substitute for an excess profits tax. A sales tax distributes the burdens of the government in accordance with what people consume. That is not exactly the result, but in substance that is the effect. The cost of government should be borne not in accordance with what we consume, but in accordance with the benefits we derive from government or in accordance with our ability to bear that burden. A great capitalist may not consume very much more than you or I, but he may have a billion dollars worth of property protected in a thousand different cities and hamlets throughout the country. He should certainly bear a larger portion of the costs of government than you or I.

Sixth. Two years ago you helped to secure a reduction in the tentative valuation of railroad properties upon which freight rates have to be based, aggregating one billion, seven hundred million dollars. This meant a net annual saving of approximately one hundred million dollars to the shippers of the country. And you helped to force a part of the burden over on passenger traffic which the railroads were proposing to place on freight traffic. This meant an additional saving to the freight shippers of approximately three hundred million dollars annually.

Seventh. You helped to persuade the Federal Trade Commission to reverse its former position and to file a complaint against the United States Steel Corporation, demanding a change in the "Pittsburgh Plus" system of fixing prices on steel products throughout the country. The agricultural industry consumes the second largest amount of steel products of any industry in the country, and you are vitally concerned in the Pittsburgh plus case. Today prices on rolled steel products are made on the price at Pittsburgh plus the freight from Pittsburgh, even though the steel is actually produced at Chicago or Birmingham. This fictitious freight cost levies a burden upon the consumer of iron and steel products throughout the West, aggregating several dollars a ton on every ton you use. In one building in Chicago this added cost amounted to over \$60,000.00. The total burden aggregates many millions.

Eighth. You have helped to crystallize the great co-operative movement throughout the nation, which will enable farmers to sell their products collectively in a sane, business-like way.

I have recited these facts simply to demonstrate in a concise manner the real value of organized activity and a few of the achievements that you have helped to bring about.

FARMERS RIGHT TO ORGANIZE.

This is a day of organization. That is the great lesson that you must learn as a result of the experience of the past few years. If it is right for those men who sell your grain to unite and fix prices which they shall charge; if it is right for those who sell your live stock to do likewise; if it is right for the great steel companies to unite in one large company, handling 50 per cent of the steel of the nation; if it is right for the railroads of America to unite in one great association representing over 90 per cent of the railroad mileage of the nation; then it is right for the farmers of America to unite in a few, powerful institutions which will safeguard their interests. The

leading men of the country recognize this fundamental truth. Here is an extract from the President's recent message to which I want you to listen:

"It is rather shocking to be told, and to have the statement strongly supported, that 9,000,000 bales of cotton, raised on American plantations in a given year, will actually be worth more to the producers than 13,000,000 bales would have been. Equally shocking is the statement that 700,000,000 bushels of wheat, raised by American farmers, would bring them more money than 1,000,000,000 bushels. Yet these are not exaggerated statements. In a world where there are tens of millions who need food and clothing, which they cannot get, such a condition is sure to indict the social system which makes it possible.

"In the main, the remedy lies in distribution and marketing. Every proper encouragement should be given to the co-operative marketing programmes. Those have proven very helpful to the co-operative communities in Europe. In Russia the co-operative community has become a recognized bulwark of law and order, and saved individualism from engulfment in social paralysis. Ultimately they will be accredited with the salvation of the Russian state."

In these movements we cannot succeed unless we have the confidence of each other. Alone and single handed, we cannot win. You remember what Abraham Lincoln said: "The twig by itself is easily broken, but bound together with others in a solid, compact bundle, the strongest arm cannot break them." Individually you and I are weak and ineffectual; but together we are strong and powerful. If the farmers of America can only see their way clear gradually to center their efforts in a few great national organizations, agriculture will be the most powerful force in American life.

FACTS REGARDING PRICES.

In order to thoroughly appreciate the necessity for organized activity I desire to cite a few concrete facts:

If we take the average wholesale prices for the years 1910 to 1914 inclusive as our basis, we will find that the average wholesale price at the close of the World War in 1918 was 200 per cent of the base price. Strange as it may seem, there was identically the same average price at the close of the Civil War in 1865, using this same basis for our computation—200 per cent. At the close of the War of 1812, in 1814, the average wholesale price was 235.

After every great war, as we have previously stated, the forces of business and society compel price declines. Within two years after the War of 1812 prices declined 78 points. Within two years after the Civil War prices declined 41 points. But what happened after the World War? Instead of prices going down after the war ceased, prices went up. In 1920, two years after the World War, prices were 50 points higher than they were at the close of the war itself—directly contrary to the experience of all peoples after all great wars. The same occurred in other nations. There are two possible explanations: First, this was not a local war, but one in which all the great nations were involved, and yet we ask ourselves: Did not those peoples in other nations go back to work producing the necessities of life? If the law of supply and demand had free play, why was there not an immediate decline in prices with the falling off of the demand?

A second possible explanation is that labor and business were better organized after the World War than after the War of 1812 or after the Civil War. But organized industry could not withstand the natural laws of commerce. Sooner or later those prices had to come down. From June 1920 to June 1921, prices in the United States on an average declined 100 points. This was twice as great a decline as ever occurred during any other years in the history of the American people; and during this precipitous decline, when all American industry was forced to participate in the readjustment in business and commerce that was in progress, the American Government se-

lected out the railroad industry and made it an exception. We told the railroads, while everybody has to reduce their charges, you may increase your charges by over a billion dollars.

One further significant fact in this connection: The latest available figures I have indicate that the average prices of farm products at point of origin are below the pre-war level. I do not believe that is true of any other great industry in our country.

AN ALARMING CONDITION.

Now let us summarize the situation in one sentence: The record of the past year demonstrates that the strongest, the most powerful organized industry amongst our people is the railroad industry; and the weakest is the agricultural industry.

That astounding fact must never be forgotten so long as you people shall live. It is time for agriculture to organize as never before. It is time for agriculture to tell the people of this nation that it proposes to organize for self-protection—in business, in commerce, in society, and in government.

PRESIDENT MANN: I think that paper is one of the best addresses we have ever had to put in our book of record of this association. [Applause.]

We begin to get some daylight on the subject when he says the farmers have fifty-four per cent of the money on deposit in banks and then when they loan it out they loan only about four per cent to farmers.

Q. What are the prospects of a further reduction in freight rates?

Mr. MATHENY: That is almost impossible to say. I think it will come, but just how soon it is hard to say. We are doing the best we can. The matters are before the Interstate Commerce Commission now. The railroads have reversed their position. You see Section 15-A of the Transportation Act put upon the Interstate Commerce Commission the duty, if you please, of seeing that the railroads get a certain return on their investment. In undertaking to do that the rates will have to go up again. But the railroads have reversed their position and they did grant us a ten per cent reduction without having to fight it out. As to what can be done in the future only the future can tell.

Q. The Railroad Labor Board has some effect, had it not?

Mr. MATHENY: The effect of organized labor in the railroads had a great effect on this whole freight rate question. The Labor Board did the best it could. I don't know just how it could have done better. It is all mixed up with politics. That is a pretty hard question to answer.

Q. Will there be a continued rise in prices?

Mr. MATHENY: I am not enough of an economist, sir, to answer that. The law of supply and demand is certainly in force, but the prices certainly did go up. Nobody knows why. Perhaps the grain exchanges and the live stock exchanges could tell us, but they won't.

Q. What is your opinion of the condition of the equipment, the rolling stock of railroads now as compared to the war and prewar times?

Mr. MATHENY: I would rather not attempt to answer that. I don't know enough about it.

Q. Well, some of them say it is worse now, but Director General Hines and McAdoo say it is better than when they took it over.

Mr. MATHENY: If the amount of money spent for the repair and maintenance of rolling stock has anything to do with the condition of the equipment it ought to be a good deal better, because they certainly spent a good deal more money than they ever had before, but when you consider what organized labor did by reason of its organization in increasing the amount of pay, in increasing the number of men and in decreasing the amount of work they did it is no wonder that the freight rates went up, and you fellows pay it.

Q. The cutting off of five hundred thousand laborers cut down the expenses a whole lot, didn't it?

Mr. MATHENY: It should. It does, undoubtedly.

Q. If the railroads are guaranteed so much income on their money why should not the farmers be guaranteed the same?

Mr. MATHENY: That is a question you will have to ask Congress, not me. How would it be if the government, with all of its politics, undertook to establish a board to make a valuation of your farm, if the government had accountants to determine what it costs you to operate, and the government guaranteed you four and a half percent on the money that you had invested in lands, machinery and property? Not so bad?

Q. If that applies to the farmers the same as the railroads where would you get the money to pay the bill?

Mr. MATHENY: I don't know. You would hardly get it from the railroads. The railroads are organized, so is the railroad labor.

Q. Mr. Chairman, I do not wish to ask any question, but it seems to me, as you have said, that this is one of the most important papers that we have had, and if we could be permitted to have it printed and send it out to our farmers it would do some good. In this audience there probably isn't more than three or four representatives of each county in the state. Down in our county we have had a dispute recently by one of the agents and a representative of the Chicago Board of Trade, and they seemed to be fairly well divided on that question. I don't know what we are going to have unless we can get this thoroughly before our people.

Mr. MATHENY: Mr. Thorne and I are lawyers and as lawyers we probably do not bear as high a reputation as some other class of society, but we are really interested in this movement. We want to help the farmers if we can. I thank you.

PRESIDENT MANN: Well, it is true that some lawyers are getting in a little bad, but we don't have that opinion of Mr. Thorne, or Mr. Matheny either.

When we want to find the last word in any new thing we go to Kankakee and ask John Collier. Now we have been talking about marketing, distribution of food and production all day. We now want to consider some of those things in a more direct way, not only for the farmer, but for the farmer's wife. John has got something started in Kankakee that is going to run over if he isn't careful. We want him to tell us about it. Come up, John, and tell us what you are doing about it.

KANKAKEE COUNTY FARMERS' MARKET.

(John S. Collier)

During the economic depression of the past year a great many farmers have found that their only sources of revenue to help keep up groceries, clothes and incidental expenses around the home was derived from butter, eggs and such other products as they could, from time to time, sell. They soon discovered that the people who were buying their products in town were paying about twice as much as the farmers were getting.

This Market was started about two years ago in a small way but was not very successful because of no organized body at the head of it. Last August, the Farm Bureau called a great many of the people together that we thought would be interested in starting a Farmers' Market, and talked over the plan. The first thing to be done was to give the people some idea as to how to prepare their products so as to make a presentable showing. Candling of eggs was taken up, and how to bring eggs on the Market so the consumer could buy them and carry them home. A one-day short course on butter making was held by a practical butter maker and the women from over the county who were making butter came to this school, and got all the information they could on the ways to make butter. These women were then given to understand that if their butter was up to a certain standard they could be advertised as makers of good butter. A meat cutter was then brought in to show how to cut up pork and tell the value of the different pieces of veal, mutton and beef. This was a most interesting demonstration for the farmers as they soon learned how

to present their material in the best possible way. Likewise, how to tie up their vegetables and handle their fruit and make lard and sausage, head cheese, cottage cheese and mince meat.

The Market was opened in a building 145 feet long and 40 feet wide. The first few weeks it did not go very rapidly because the consumers were a little afraid if the products were not good there would be no one they could hold responsible, but after a few weeks and some advertising the Market began to grow, and it grew so rapidly that the building in which the Market is held is too small to accomodate the crowds who attend the



Kankakee County Farmers' Market.

Saturday sales. It has been the salvation of a great many small farmers of this community as they have been able to make a little extra money that will tide them over during the financial depression of this period. They have learned how to market their products and become real salesmen.

In case some of the products are not up to standard there is no question about the consumer being protected, as each farmer makes a deposit with the Farm Bureau and this matter is taken care of from this. Products must be clean and fresh and of absolutely first quality. The consumer has learned that he will be protected in every way. Scales are tested each

morning, and a standard scale is in the center of the room so each buyer can himself test the weights. The Market has won the confidence of the consuming public and the farmers aim to sell their stuff at a little below the average retail price, ranging from 30 to 200 percent.

To give some idea as to how the Market has grown, for the four Saturdays of December, over 1200 People were on the Market each Saturday. The Market has established a very good feeling between the producer and the consumer in the city. Occasionally, of course, some one thinks they are being hit because of the fact that the farmers are marketing their own products. These people are very few, and the big majority of business men of Kankakee find it is a good thing for the City, and it is really helping business. The biggest problems we have had to handle has been to keep the products clean and sanitary, and be able to accomodate the crowds that come.

That this thing is worth while and can be carried into every city of the state is our belief, and we think it is a good thing for any community.

Q. What arrangements do you have for determining who is a member of that association, or who is authorized to sell produce in the market?

Mr. COLLIER: In answer to that I just want to read one of our cards in the nature of an application:

FARMERS' MARKET PERMIT.

1. I, the undesigned Producer, hereby agree to abide by the rules and regulations of the Farmers' Market Committee.

2. I also agree to be responsible for the purity of my food and cleanliness and in case of any violation of the law will be personally responsible for all damages. I shall try, to the best of my ability to follow out the law concerning Pure Food.

NOTE: No one will be permitted to sell products in the Market unless they have first obtained a permit from the Office of the Soil and Crop Association, 290 North Schuyler Avenue, Kankakee, Illinois.

Signed.....

Post Office.....

Date.....

Permit

Now we have had these letters printed, and I will leave it to you whether they are worth anything or not:

DEAR CUSTOMERS: If you have been patronizing the Farmers' Market we want to thank you and hope that you continue to come every Saturday and every Wednesday morning. If you have not been coming we take this occasion to invite you to the Market every Saturday and every Wednesday morning at 9:00 o'clock.

Our Farm Products are clean and fresh each morning and from twenty to one hundred per cent below retail price. We will appreciate seeing you next Saturday morning at the Market. You know if you trade with us it makes it possible for us to trade with you.

Yours very truly,

Booth Number.....

Q. I would like to ask Mr. Collier if he allows hucksters on the market?

Mr. COLLIER: No, sir, we consider our company too good. There must be a producer.

Q. Do you have any bad notes?

Mr. COLLIER: I'll tell you what we did. We got hold of a bad note the other day for \$32.50 that the man could not pay, but we held his life insurance and we are going to get the money.

Q. Are there any butchers left?

Mr. COLLIER: Yes, there are a few left. They fight pretty hard. They cut the prices on meat on Friday, Friday night they would cut the price down way below what they pay for it, but listen,—we had to get the organized labor together, they have about four hundred in that town, and talked to them about it. They said, "We'll stick with you." And they

stuck. The butcher says, "Well, that thing don't pay." So the meat today is about one hundred percent higher than it was two or three months ago.

Q. What do you do with all the meat that you don't make sausage of?

Mr. COLLIER: We sell it to the hotels, and some of it we keep in the refrigerators.

Q. Do you make the whole hog into sausage?

Mr. COLLIER: In Southern sausage, the whole hog is made into sausage. There are eight or nine ways of making sausage with that plan. You know you have got to study the market conditions sometimes. We did have stuff left over, but as the people learn the trade they pretty near know how to make the market.

Q. You know how much sausage is coming in every day, don't you?

Mr. COLLIER: No. Of course, once in a while we have some stuff left over. If there is any stuff left over we take it to the hotels and restaurants at a little loss,—not loss, but a little less than they were sold for in the market. They can afford to do that.

Q. Can you regulate the supply?

Mr. COLLIER: No, you can't do that.

Q. How far out do your farmers bring their products in to market?

Mr. COLLIER: Some of them as far as thirty miles. We have one man that has been feeding honey to the market several weeks. He is just about thirty miles away.

Q. Do you have men from all parts of the county?

Mr. COLLIER: Yes.

Q. How large is the city in which the market is located in?

Mr. COLLIER: I think our city is about twenty-two thousand. There might be a limit. In the small city you could not do it.

Q. I don't know whether you have the same organization in your town that we have in ours or not, but we are prohibited from selling milk that is not pasteurized. Is that lawful?

Mr. COLLIER: No, sir, it isn't. We said we will go on, we will just carry this to the Supreme Court. You know that is a joke. You know it don't kill the germs. I don't need to go into that subject at all. It is a joke.

Q. Would a market be good for a town like Monmouth?

Mr. COLLIER: I don't know your conditions here, but I expect it might be. It is a good thing for the farmers.

Q. Is the Chamber of Commerce on very friendly terms with you?

Mr. COLLIER: Yes, the Chamber of Commerce is on good terms with us. Seven out of twelve of those officers we control and they are on friendly terms with us. In fact they gave us a hundred dollars the other day to help us along. They can understand that language.

Q. You have to use a little politics.

Mr. COLLIER: That isn't politics, that is good business. You see the point.

Q. How do you stand with the business men around town?

Mr. COLLIER: I don't think any of them are knocking us. I think most of them feel pretty kindly towards us on this thing. As a matter of fact it may hurt the butcher a little bit, and the grocer. Here is a man out here thirty miles away who brings in eggs, forty dollars worth of stuff, and the chances are that eighty percent of the money stays in town before he leaves town.

PRESIDENT MANN: The Farmers' Institute has always believed in co-operating with kindred organizations, at least preserving the utmost harmony with other farm associations. The president of the Grange would like to send greetings to the Institute, and Mr. Miller of Belleville will present them.

GREETINGS FROM THE GRANGE.

(W. F. Miller.)

MR. CHAIRMAN, HONORABLE DELEGATES AND OFFICERS: We are not going to take very much time. I just have a little message to bring to you from the State Master of the Illinois State Grange. He called me up over the

long distance phone and said that he wished to extend the courtesies to all the officers, the delegates and the directors of the Illinois Farmers' Institute.

Now, my friends, I just want to say a few words to you folks. I want to give you a little something to think about. I know that there is not a man in this audience who is not a booster for his Farm Bureau. But many are beginning to wonder what we are going to do with some of the fellows whose three years are up. Are we going to get them to sign again or not, —that is the question that is confronting us today.

There are many who have studied this situation more thoroughly than others and we can see the improvement the Farm Bureau has done, and the other different farm associations. I just want to emphasize this fact, that this farm bureau work, the U. S. Grain Growers, and all this co-operative work that we are hearing so much about is a matter of education and we must look to our young people on the farms to carry the work on. We farmers take very good care of our live stock, but I must say that we are neglecting one of the most valuable and essential products on our farm, and that is our growing boys and girls. [Applause.]

I tell you, my friends, when the boy and girl leaves the eighth grade school in the country and they are growing into young womanhood and manhood, that is the most essential time of his or her life. It is right then that he or she is going to begin to form ideas of what they are going to do in the future. If you have some organization to take the place of their school work in which they can carry on their education you are going to get somewhere with those young people.

I am speaking from experience, my friends. I am speaking with every degree of sincerity. I have watched the Grange in my own county. I have been a member of the Turkey Hill Grange since I was sixteen years old. A boy or girl can join at fourteen. Your farm bureau is all right, it is wonderful, but I will put this question right before you: Does it hold the interest of the young boy or girl on the farm? Does it do that? It is all right for the parents.

Now remember this, my friends, it is not only the dollars and cents that we get out of life as we go along. We must have a little fun as we go through life. If we are going to live in the country, if we are going to ask our young people to stay in the country so we can carry on agriculture, so we can carry on these wonderful things that we are trying to accomplish we must provide some entertainment, we must make things worth while for these young people, or we can not blame them for passing out of our lives.

That is where the Grange comes in. We have in St. Clair county a farm bureau with over eighteen hundred members, and of these eighteen hundred members there are almost nine hundred members who are Grangers. I wish to make the statement right here that the head of every family that belongs to the farm bureau, every head of the Grange is a member of the farm bureau; and I will also make a statement on top of that that at the expiration of the three years these members are going to come right back and sign up for three more. It is a matter of education. That reminds me of a little story. Three or four persons were carried before St. Peter. St. Peter looked down upon the first and said, "My friend, what did you do down on earth that you ask admittance here?" He threw out his chest and said, "I administered to the sick. I brought forth the new born babe. I was a doctor." The next man came up and was asked, "What did you do down on earth?" That man threw out his chest and said, "I gave counsel to my fellow man. I gave him advice in times of trouble. I was a lawyer." The next man came up and St. Peter said, "What did you do down on earth?" And he said, "When my country entered conflict with another country I went on the field of battle and I faced death bravely. I was a soldier." And then way out at the end of the line there was a little old woman came forward, and St. Peter said, "My good woman, what did you do down upon earth?" She said, very timidly, "It was I, it was I that made it possible for these men to do the things down on earth that they did. I was a school teacher." It is a matter of education, my friends.

Now then, if we are going to live in the country, if we are going to ask the boys and girls to stay on the farm let us show them that there is just as much fun to be had in the country in the good old fashioned way as in town. There is lots of fun to be had in town, but I will tell you, men, I am a member of a Grange of 250 people. We are located within three miles and a half of a town of twenty-five thousand; where we have the best kind of moving pictures and dances. We have members who live on the other side of the hill who pass through the city of Belleville and come out and attend our meetings. Why? Because they know they are going to have some good, wholesome fun. We have our community hall there which has steam heat and electric lights, we have a stage where we present little plays. We have an annual strawberry festival that is the talk of Belleville. They look forward to it when the bluebirds begin to sing. They ask "When is your strawberry festival going to be?" We served 475 plates of chicken supper last summer to the residents surrounding there. Everybody has a good time. We have lots of fun on good old Turkey Hill. We believe in the Grange. I thank you.

PRESIDENT MANN: I believe that such great crops as we grow, as wheat, corn and oats, were once weeds, but that don't mean that all weeds have the value that those crops do, and the farmer has a constant conflict with a lot of weeds, weeds that we haven't trained and we don't want to train them. The purport of the seed law is a move internationally to help the farmers get rid of the weeds. Mr. Wilson, who is the Chief Seed Analyst under that seed law is here and I would like to have him explain the seed law a little bit to you. Mr. Wilson:

ILLINOIS SEED LAW.

(Albert C. Wilson.)

MR. PRESIDENT, AND DELEGATES TO THE CONVENTION: I am very glad to have this opportunity to explain the state seed law, but I think probably a great many of you fully understand it. There are some points which might bear explaining, and before I start I think I want to say that I was very much interested in the talk on the Farmers' Market given by Mr. Collier of Kankakee. He brought out the fact that a great amount of sausage was sold every Saturday and Wednesday at that market and I was very pleased to know before he got through that that was pork sausage, because I heard at one time of a party who was making sausage known as rabbit sausage. He had a good deal of sausage to sell and people began to wonder why he could sell so much rabbit sausage and they asked if he was using anything else in the sausage. He said yes, he was using a little horse meat. Well, they wanted to know how much horse meat. He said fifty-fifty. "Well, what do you mean by 'fifty-fifty'?" "Oh," he says, "one rabbit and one horse." [Laughter.]

The seed law which was adopted in 1919 was termed, as most seed laws are termed, "Label Laws", because there are certain label requirements. That is, we require the seller of seed to label it with certain information so that you farmers, or anyone buying that seed, will know what the quality of it is.

The seed law in Illinois requires that it be named with the common name and the names of the weeds which are present in greater proportion than one to five thousand of the farm crop seed. If Canada thistle, quack grass, dodder, wild mustard or wild carrot are present in greater proportion than one to one thousand seeds that seed is not saleable. If buckhorn, curled dock, field sorrel, ox-eye daisy or corn cockle are present in greater proportion than one to five hundred seeds the seed is unsaleable. So when you buy seed if you see on the tag the words "Curled dock, Canada Thistle" or any other weeds, it means that those seeds contain the noxious weeds in a proportion not greater than one to five hundred seeds. If it was greater than the law would allow they could not put a tag on it. I am not saying there is no seed sold but what is all right, because we find some now and

then that is sold that doesn't come within the law, but those cases are very few I am glad to say.

Another thing the label must show is the percentage of other weed seeds, and also the percentage of inert matter. The law says all lots or packages exceeding one pound in weight must have a tag, and it doesn't say any place in the law that the farmer is exempted from this provision. Therefore, when you have seed to sell to your neighbor it means that you must tag it the same as the dealer does. Now that is only right, that is only fair, to give that neighbor of yours the same opportunity, the same privilege that he would have in going to the store in town to buy seed.

You might feel sure that your seed is absolutely clean, your neighbor may feel the same about it, but there might be something in there that you did not recognize, and I will say that we get new seeds every day. I was in Monmouth this last Saturday and I got some seeds from the Farm Bureau office that I did not know. I took them home and examined them carefully under the microscope, looked up the reference books and I found what it was. It was a seed that is imported, known as corn flower or blue bottle. It is best to take advantage of the service which is rendered free to the farmer by the State Seed Laboratory. You can have five samples analyzed in the year. The year begins July 1st and ends June 30th. This is a service that you are helping to pay for and you ought to take advantage of it. Even if you don't intend to sell any seed have it analyzed so you will know whether you have pure seed for your own farm or not. Many farmers have written in to the office and said how well pleased they were with the operation of the seed law because they had found that their seed contained more noxious weeds than they would care to sow, and consequently they wanted to get rid of it.

The question comes up—how can you sell it, or how can you get rid of it if it is unclean? The law provides you may sell it as unclean seed to a dealer who has proper facilities for recleaning, or he may sell it to some wholesaler that has the proper facilities.

Mr. Mann has referred to the fact that one thing we must bear in mind in taking care of the seed is getting rid of the weed seeds. If we are going to accomplish the results we would like to accomplish it means the farmer will have to change his rotations in many cases so he may eliminate the weeds and so keep the product as clean as possible to be sold to the dealer and to the neighbor.

I think probably I have taken up the time, Mr. President, but if there are any questions I would be glad to answer them.

Q. What months did you say the seed law applied, from July to when?

Mr. WILSON: From July 1st to June 30th the following year.

Q. That is one season of 365 days.

Mr. WILSON: The reason I stated that was it takes in the season when seeds are sold. You might think it was the year ending December 31st. I wanted to make it clear.

Q. Does that law apply to the seed shipped to other states?

Mr. WILSON: We can't legislate against the outside. The purchaser of seed in this state, if he is a dealer, must comply with the laws in this state, but if the farmer buys seed from another state and is willing to accept it without the analysis, as is required by the Illinois Seed Law, he is taking the responsibility and the chances. Insist on it being equal to the Illinois Seed Law when you buy it. I thank you.

PRESIDENT MANN: You know one reason why it is so hard to get rid of weeds is their rate of multiplication. Oats will yield thirty to forty-fold, wheat forty to fifty, corn perhaps eight hundred to a thousand-fold, but the weed plant yields a million and half fold. A million and a half seeds from one plant, from one seed. That is one reason they are so hard to fight.

Mr. Wilson's rabbit story puts me in mind of one. A fellow was selling a lot of rabbits and another fellow asked him how he got so many rabbits.

He said, "I come to town and watch and when they stick their heads in the alley and meow I shoot them." [Laughter.]

If there is nothing further we will adjourn. Don't forget we will have a band this evening at seven o'clock. Come early and hear the music.

THURSDAY EVENING SESSION.

February 23, 1922, 7:15 o'clock P. M.

Music.....High School Orchestra
Boys' and Girls' Glee Club.....Monmouth College
Cornet Solo.....Fred Stanton

PRESIDENT MANN: Agriculture had a friend in court without knowing it and at a time when agriculture needed it. We have that friend here and I want to introduce to you Hon. Carl Vrooman, formerly Assistant Secretary of Agriculture, who will now address you.

FEEDING THE WORLD.

(Hon. Carl Vrooman.)

While out on the farm one day I came across the son of a tenant of mine working in the field. "What time do you get to work in the morning?" I asked. "About six o'clock." "And what time do you knock off at night?" About six o'clock." "And what do you get for sweating all day in the hot sun?" He looked up astonished. "Get?" he said, get? Nothing if I do and hell if I don't."

I used to say that this boy's remark epitomized the condition of the farmer for thousands of years preceding the advent of scientific agriculture.

But today the situation has changed. During the past year or two one could lose money faster farming than he could loafing. It has been a case of "nothing if you don't and hell if you do."



Hon. Carl Vrooman

During the war I was proud to be able to tell how American agriculture had been mobilized to feed the hungry mouths of the world. I not only was proud to be able to tell that story in this country where I had the privilege of speaking to farmers and business men's organizations in some forty-two states of the Union, but I was still prouder to be able to tell that story in England and in France. They knew "over there" the wonderful story of how we had mobilized cannon, fighting men, ships of war and all the other war paraphernalia, they had heard how by economy and self denial the American people under Mr. Hoover's leadership had saved forty million dollars worth of food, but they had not heard how by toiling early and late, by plowing up pastures and "mining the soil" the farmers of America had increased the nations food production, not merely forty million or four hundred million but one thousand million dollars worth. Long

before we sent a single battleship abroad, long before we sent a single doughboy over there, we had mobilized six million farmers in the fields

and furrows of America to raise the food that was to feed not only our armies and the armies of the Allies but also the civilian populations of our Allies and of the neutral nations as well. The first colossal contribution we threw into the scales of war was food in almost unlimited quantities,—food that kept the submarine from starving England into submission.

This is a great story. I wish I had as cheerful a one to tell now, but the story since the signing of the armistice has been of a different kind. Our history during the past year and a half is more like a nightmare or a delirium than anything else. It is an incredible thing that this nation of ours,—the richest nation that the world ever saw, with more gold than we know what to do with, more food than we know what to do with, more coal, more iron, more copper, more of every kind of wealth than we know what to do with piled around us in profusion and confusion,—for a year and a half has been headed down the hill of industrial bankruptcy.

How has it happened? Every country in Europe has reasons for its depressed condition. All of them are short of money, short of food, short of iron, short of coal, short of copper, short of all the raw materials, cotton and everything else. They have gigantic, real, material difficulties that stand like mountains in their way. How has it happened therefore that we with no big difficulties except mental and spiritual ones have been going down hill financially and economically every day since the signing of the armistice, while slowly but surely they have been "coming back?"

SELFISH POLICY CLOSED MARKETS.

What is the cause of this extraordinary situation? It required almost an act of genius on our part, within a few short months, to transform this the richest country the world ever saw into a country that for the past year has been losing money faster than it ever made or lost it before. We had but to obey the dictates of common sense and common decency and a pathway of prosperity stretched out before us like a vision of enchantment. But we suddenly decided to throw into the scrap heap the ideals that had given us driving power, and lifting power during the war. We wrapped the mantle of a purblind selfishness around us. Like Pharo of old we hardened our hearts and said, "the war is over, from this time on we are going to look out for ourselves. Let Europe take care of itself. We will sell them nothing on credit. If they want anything let them pay cash."

Then what happened? The farmer was hit first. He had the biggest surplus, and that surplus was like a millstone around his neck, every day dragging him down, until the prices of corn and other farm products got below even half the cost of production. In some of our states prices went below a quarter of the cost of production.

I have been working on this problem during the past year, almost totally neglecting my own business. I have been in Washington most of the time. I told some of the business men in the East, "You don't listen now. You think it is only the farmer that is hit. But there is a silver lining to this cloud. We are all tied together. If we go down you will go down, you business men in the east. If we have no money to buy with, you will not be able to sell us what you manufacture. Although you make money faster than we do when you make it you will lose it a lot faster than we do when you begin to lose it. If necessary, we can eat our corn and our chickens and our butter and our vegetables. If necessary, we can burn our corn, and then practically the only thing we have to pay ready cash for is coffee, sugar and taxes. But you business men have got a weekly payroll that has to be met and it is pretty nearly as large in times of panic as it is in times of prosperity. The first thing you know you will be harder hit than we are." I told them that six months ago. They were polite, but unbelieving.

But in Chicago the other day I was talking with a multi-millionaire and he almost cried. He said, "I have never known in all my life such times. There was no time during the war when our financial and economic conditions were as bad as they are now." And that is true of practically

every business enterprise in Chicago, except the banks, and if our panic had gone farther, the two banks that blew up there the other day probably would have been harbingers of a general collapse. But I think for the time being we have warded off a general smash.

However, business is still flat. The other day I was in the east. I asked a friend, "How is business?" He said, "It is going on four flat tires." And even he was too optimistic. I am told that Julius Rosenwald had to throw between fifteen and eighteen million dollars into Sears-Roebuck to keep it afloat. That is just one sample of a process that has been going on all over the country. Business is just as hard hit, fellow farmers, as we are.

PROBLEM OF SURPLUS CROPS.

What is the cause? There are a good many causes. Of course there is no one cause for anything. One of the big causes of our present trouble, as you farmers know, is high freight rates. Another big cause is a cumbersome and costly system of marketing farm products. Both of those causes are very complicated and hard to remedy. It will take years to work out a solution for either of these problems. But there is one problem, and luckily for us it is the one that has caused the most trouble of all, that is comparatively simple and that can be quickly solved. That is the problem of the surplus crops. Any of you who drive motors know that it doesn't take much sand in the gear box, nor much water in the gas, nor much of a short circuit to put a car out of commission. These surplus crops of ours have done just that with our whole economic and financial system.

Roughly speaking we have less than a billion dollars' worth of surplus agricultural crops for which there is neither a domestic demand nor a foreign cash demand. That constitutes about five or six percent of the total crops of the country. That may sound to you like a negligible quantity. A mere handful of sand in the gear box might sound like a negligible quantity too, but it isn't. Anyhow this less than a billion dollars' worth of surplus crops, constituting perhaps five or six per cent of our total crop, has depressed the value of the other ninety-five per cent of our crops, more than five times its own value, or several billion dollars. Moreover it has injured business to an equal extent. I am speaking the literal truth. This is rather an understatement than an exaggeration.

Since this unsaleable surplus has depressed the value of the rest of our farm crops several billion dollars' worth, evidently if we could not sell it for cash the next best thing would be to sell it on credit, and if we could not do that the next best thing would be to give it away, and if we could not do that it would be a blessing of Almighty God to send a bolt from heaven to wipe it out. We would make several hundred percent even on that operation.

WHAT OUR GIFT TO RUSSIA DID.

Some of you may be saying to yourselves, "That sounds very interesting, if true." Well, I am from Missouri myself. I was born there, so I have got a few cards up my sleeve for anybody that doesn't know that the surplus is the controlling factor in determining prices. I have a fact or two that will demonstrate the accuracy of these statements. A few weeks ago, the Committee on Foreign Affairs of the House of Representatives asked some of us to go before them to speak in favor of a proposal to have the United States Government make a gift of food to the famine sufferers in the Volga basin of Russia. The bill appropriated ten million dollars to be spent for American corn to be shipped to Russia. Mr. Hoover was there, together with Governor Goodrich of Indiana, who had just been over in Russia, and a number of other men. I went before the Committee at the request of American Farm Bureau Federation. And when we were through with our testimony they doubled the amount of the appropriation and made it twenty million dollars. Then Mr. Hoover got the Servian government to give ten

million dollars to buy still more food with. So there was thirty million dollars in all.

That money isn't all spent yet, but the very day that they began to spend it, the prices of corn and wheat began to go up. The price of oats did not go up for some time because they did not buy any oats. Since then prices have gone up still farther. I do not mean to say that these purchases for Russia have been the only bull factors.

There is another important factor that isn't often mentioned. While I was in Washington last spring and summer, trying to get some legislation that would enable us to get rid of some of our surplus crops abroad on credit, Mr. Eugene Meyer, head of the War Finance Corporation bitterly opposed the plan, insisting that Europe did not need more food than it was then buying for cash. I at once went or sent a representative to every Embassy and Legation in Washington to get full and accurate details as to just how much food and other farm products they needed from America. I presented this data to the Agricultural Committee of the Senate and it proved convincing to them as is shown by the fact that they reported unanimously in favor of the bill. A little later we had a unanimous vote of the United States Senate in favor of the bill. A little later we got a two to one vote in the House, in Committee of the Whole, in favor of the bill.

However, that did not prevent Mr. Meyer and Mr. McFadden, chairman of the House Committee on Currency and Banking, from assassinating the bill just before the recess. There was no time to get another vote on it and so the export credit feature of the bill was killed. The only thing that the bill contained after that was the domestic credit feature, which was good as far as it went. That feature enabled the War Finance Corporations to loan money to banks or middlemen or to farmers' organizations.

MARKETS, NOT CREDIT ALONE NEEDED.

I said at that time, and I think farmers will agree with me, that it wasn't credit the farmer needed primarily, but markets. I said, "We are not paupers, we don't need to be on anybody's charity list. All we want is a chance to sell the products of our toil and soil, not for a profit, but for something near cost."

Last fall we did not get one-third of the production cost. I sold corn last October in Iowa for twenty-five cents a bushel. It cost me more than seventy-five cents to grow it. There was a time in February when I could have sold corn for September delivery for seventy-four cents a bushel in Chicago, which in Central Illinois would have netted me about sixty-four cents a bushel, and in Iowa about fifty-four cents a bushel. But as I had credit I hung on to the corn and later sold it for about half that much. My situation reminded me of the stranger who went to the prayer meeting. Everybody was called on to tell "what the Lord done for them," and all responded but the stranger, who never spoke publicly because he stuttered and had a hair-lip. Finally the parson said, "Brother, everybody has spoken but you. Won't you tell us what the Lord has done for you?" He was very much embarrassed, but quaking and blushing, finally rose to his feet and stammered, "He d-d-dam near ruined me."

That is what credit did for me and for a host of other farmers last year. I lost several thousand dollars by having credit. It was a good thing however that I continued to have credit last fall, as a consequence I sold very little corn in Iowa for twenty-five cents. I have been holding most of our corn and now I can get about two-thirds of the cost of production for it instead of one-third at present prices. I am still losing money, but I am not losing it as fast as I did last fall.

After this controversy in Washington, Mr. Wallace sent two men abroad to study the European situation and find out what quantity of our surplus farm products Europe could use. Their report of course would show whether Mr. Meyer or I was right. These men went all over Europe and came back about a month ago. Their figures showed that the estimates I had made were too small rather than too large. They gave the number of

million tons of foods and textile each country needed—how many million tons France needed, how many million tons Czecho-Slovakia needed, how many million tons Italy needed, how many million tons Germany needed, how many million tons Austria needed, and so on. That report was a tremendous bull factor and it is going to be a permanent bull factor. It appeared a few days before Congress voted the gift of twenty million dollars' worth of grain for Russian Relief.

A GOOD BUSINESS PROPOSITION.

I am trying to make plain that I am not attempting to infer that our gift of grain to Russia was the only bull factor, but it clearly was the one that finally started the market on the up grade. It would be putting it very moderately to attribute at least 5 cents a bushel of the rise in grain prices to this cause. I suppose there are about one billion five hundred million bushels of corn in the country now. Five cents a bushel on a billion and a half bushels would be seventy-five million dollars. By giving away twenty million dollars worth of grain we made a profit of seventy-five million dollars in a few days. Not a bad business operation.

Now I am appealing to you not as humanitarians, I am appealing to you as business men. We are supposed to be a business nation. Did you ever hear of anybody making money faster than that? And can you tell me why we are not now all standing up on the house tops and "hollering our heads off" demanding that Uncle Sam give away more millions of dollars' worth of corn—and still more, until we have no more surplus corn and Europe has no more starving mouths. Wouldn't it be good business, to say nothing about consciences and right and our place in history?

When I first went abroad during the war there wasn't a nation over there that did not love us. They looked upon us as the saviors of civilization. We had come into the war without a selfish purpose; we had come into the war just to save human liberty, and they were too grateful for words. I would hate to go over there now, because I know what they think of us. They think we have forgotten them; they think we have grown cold and selfish; that we have become a lot of money-grabbers,—what they used to say we were. They forgot it during the war, but they have had cause to remember it of late. While they starve over there not by the thousands, nor by the hundreds of thousands, but by the millions we have kept back our food and not because we need it ourselves. No! Our food was rotting in every state in the middle west and northwest; and we were burning it for fuel. We would not give them or even sell them on credit the crumbs that fell from the rich man's table.

THE REAL CAUSE—INTERNATIONAL BANKERS.

Can you tell me why Mr. Meyer and Mr. McFadden stabbed that bill in the back when it was too late to have another vote of congress on it? I have asked myself a hundred times, "Why has this man done this awful thing? It is too inhuman, and besides it is bad business." But one day I picked up a paper in which was a statement that a syndicate of international investment bankers were planning to loan a billion dollars to Europe. Suddenly, the whole thing seemed to flash through my mind. Yes, these syndicates, they have been loaning money to Europe ever since the signing of the armistice and loaning it to them not only at a high rate of interest, but for big commissions as well.

If we loaned,—as this bill in Washington provided,—if we extended to them credit to the amount of five hundred billion dollars' with which to buy our agricultural surpluses, nobody would make any commissions. But if these bankers could loan them that much money the bankers would make at least fifty million dollars in commissions. Now do you see any reason why they wanted to stop this law?

Five hundred million dollars' worth of our agricultural surplus exported or even one-half of that amount would have pushed the price of corn to at least seventy-five cents. It would have rehabilitated agriculture. There

would have been money rattling in all the farmers' pockets, until the farmers went to the retailers and spent it. The retailer would then have bought from the wholesaler and he in turn from the jobber. The jobber would have bought from the manufacturer. The railroads would have had something to carry. The bankers would have had the load taken off their shoulders. Gradually prosperity would have come back to the country. But the international banker did not care so much about that. He wanted his fifty million dollars' commission.

What has Europe done with the money it has borrowed from our international banking syndicates. Generally it has gone to the Argentine and bought Argentine corn, cattle, wheat and hogs while our products have rotted on the farms or been burned for fuel, or been sold by farmers for a quarter or a third the cost of production.

That is why we are *not* feeding the world, today as we did during the war. The government told the farmer during the war to produce all he could. We plowed up our pastures, some of them pastures that we have taken years to create. We went in to produce the maximum of food. At the time of the signing of the armistice, Mr. Hoover submitted a report, to the effect that the world needed more food than the world at that time was producing. Mr. Hoover was right. The world did need the food. There was a hungry mouth for every ounce of food that we or anyone else produced. But they did not have the cash to buy it with—and suddenly we stopped selling them anything on credit. Then our unsaleable surpluses began to pile up and prices tumbled and business paralysis set in.

SELL SURPLUS ON CREDIT, IF NECESSARY.

Now there is just one point that sometimes people don't get in connection with this subject, and that is the difference between the surplus crop and the ordinary crop. Now a surplus crop, as I have tried to explain, is not an asset, it is a liability. It is like sand in the gear box of an automobile, or water in the gas. If we sold it to Europe and they did not pay us back for all of it we would lose a few million dollars, but we would still be making money, just as we made money by giving Russia twenty million dollars worth of grain. And yet international bankers like Mr. Meyer get up gravely and say, "But some of these people might not be able to pay you back." Yet these same bankers are willing to loan money to these same people. These European countries have got good security. They are offering us good security, and every day our international bankers are loaning them money on that security.

I don't know how it is going to work out, but I hope when Mr. Hoover stops buying, when he has expended his thirty million dollars, I hope there won't be any sag in the price of corn. But I fear there will be. It won't go back to where it was, but we have still a good big surplus on our hands, hundreds of millions of bushels surplus, and that is going to be a handicap to us not only for the rest of this year but also next year, in spite of all of our talk about reducing the crop. You know when you talk about reducing the acreage there are always a few individuals who say, "Everybody else is going to reduce, it would be a good thing for me to increase my acreage, because prices are going up." And such Ishmatelites will put out twice as much corn as usual.

If we could get rid of a reasonable part of this surplus abroad on credit, we could raise prices to normal. Then this country would find itself once more on the highway to prosperity. Moreover we would gain back some of the affection and admiration which Europe had for us during the war, and I for one am not entirely oblivious to such consideration.

I like to feel that the America we love, that the potential America is the America that we see in action. You remember those words of Kipling about England.

"If England was what England seems,
A thing of putty, brass and paint
And not the England of our dreams,
How quick we'd chuck her, but she ain't."

That could apply to America today. We are in a moral slump and that moral slump is the basis of our economic slump. When we get right morally and take our true place and assume our responsibilities towards the other nations of the world, we will begin to come up again in an economic way. We have all been struck with amazement at the splendid results obtained from one step in that direction—this gift of twenty million dollars to Russia that already has started the price of corn and other agricultural products going up. Why not take some more steps? It is time for us to sound a new note. It is time for us to say—the spirit that denominated this country during the war and made us not only the material leader but the spiritual leader of the world, must come back.

Our ambassador to France, Myron Herrick, in a recent issue of the Chicago Tribune made an excellent statement on that very point. Do not say "Out here in Monmouth, out here in Illinois we haven't much influence in the world." We have an influence on the world. Not only the words we utter but the thoughts we think have an influence in the world. You know how confused and upset mentally the world has been ever since the war was over. Hardly any class of our population has been normal, either in action or in thoughts, and thought comes before action. If we get right mentally we will get right otherwise.

FOREIGN MARKETS MEAN PROSPERITY.

The only obstacles America has today are mental and spiritual ones. As I said at the start, we are surrounded at every side by more of wealth not only than any nation ever saw, but than we know what to do with. I hear men gravely saying, "If you sell this food to Europe what would you get for it? We don't want any more gold, we don't want any other manufactured products, to compete with the products of our factories." Some of our so called leaders talk as though we all had softening of the brain. Better have a little softening of the heart and a little clarifying of the brain. If we would do that our material difficulties would take wings and speedily fly away. We have every material advantage in the world. We are the only nation in that favored condition. And I sometimes fancy that over in Europe, when they see us rolling in plenty while they starve, that they must think that to call us a dog in the manger would be to flatter us. I have sometimes feared that a sight I once saw on the farm would be the picture they might select as being more nearly typical of us. I saw an old sow go up to a trough, eat all she could and then climb in and lie down, so that none of the rest of them could get anything.

But I don't think that is going to be what they will say about us now, for I hope and trust that we have started on a new track. We have actually given away twenty million dollars worth of stuff that we had no use for. It doesn't sound very magnificent; it doesn't sound very heroic; it doesn't sound very generous, but it is an improvement on anything we had been doing for some time previously. It is a step in the right direction. I believe we are going to show enough intelligence to sell on credit such of our surpluses as cannot be sold for cash. And if we find any nation actually starving that is unable to give us good security I believe we will have enough decency and business foresight to give them what they need and we have no possible use for.

Now let us, the plain, common people of this country, the sovereigns of this country insist upon this policy—let us talk it, let us think it, let us feel it. There is a power in feeling that is greater than any power in matter. We can start currents of emotion and currents of thought that will roll up tidal waves until they reach Washington and from Washington they will roll out to bless the world.

Our task of feeding the world was not finished when the armistice was signed. There is an inglorious period between that time and the present. But I believe that the America that we believe in is going to take a new inspiration from this hour—that we are going to gird our loins

and go forth and assume again our rightful place, our full responsibility among the nations of the world. At any rate there is only one thing that you and I can do, and that is to do our utmost trying to create a public opinion in favor of such a policy. Before God, before the world, before posterity, can we do less?

Vocal Duet.....Doris and Dorothy Sites

PRESIDENT MANN: It gives me pleasure to again present to you Dr. Wilson who has been president the past year of the Department of Household Science and who was reelected president this afternoon.

Dr. WILSON: We are going to share with you two of our speakers whom we know you want to hear. They only have a short time apiece, but they have a message. I can only tell you one thing that I think will be worth while, because I do not want to take their time, but you will agree with me that any woman who can get a telephone message at nine o'clock, take a train for two hundred miles and ride seven miles by horse and buggy and then say "I'm here, what do you want me to do" is someone who has that pep and push which goes with efficiency.

I take great pleasure in presenting to you Mrs. Grace Viall Gray who is going to talk on "The Home Maker's Ten Commandments."

THE HOME-MAKER'S TEN COMMANDMENTS.

(Mrs. Grace Viall Gray.)

LADIES AND GENTLEMEN: That is a wonderful introduction, isn't it? But really Dr. Wilson isn't that nice to me personally. She is nice to me in public, but when she tried to entice me to talk tonight I said, "How long may I talk?" She said, "As long as you wish." Then later she sent a committee in the afternoon and said, "You had better talk only twenty-five minutes." Later in the afternoon another committee waited upon me and said, "You had only better talk twenty minutes." Tonight as I came in the door Dr. Wilson met me and said, "You know, I think you better just talk fifteen minutes." That is the way she treats me in private. [Laughter.]

We speakers are treated in very peculiar ways. Recently at a meeting, just as the gentleman speaker and I were leaving, the chairman of the meeting said, "We have many things to be grateful for. We are very grateful to these afternoon speakers who have to leave before the evening meeting." [Laughter.] Those are the kind of things that we speakers get and still we have to smile and pretend we like it.

Now for the first commandment that I have laid down for the home maker in Illinois is this:

"THOU SHALT KEEP THY HEALTH."

Mrs. Grace Viall Gray

No woman can enjoy her home and her children if she does not enjoy good health.

She may have an automobile, she may have a beautiful home, she may have lovely children, she may have a good social position in the community, but if she does not have her health then she cannot enjoy those things and she is poor indeed. So that is the first commandment and the first thing that every woman in Illinois should see to, that she has good health. If she hasn't it at present, get it and keep it. I am sure our wonderful president will agree with me on that.



The second commandment is this:

"THOU SHALT NOT NAG."

I am surprised that the clapping was done by the gentlemen. [Applause.] Nagging is a habit that is formed by both men and women. It is an unconscious habit, perhaps, but it goes on and gets larger and greater, and there is no one that is more unfortunate than the one who has formed this habit of nagging.

The third commandment is:

"THOU SHALT NOT WORRY."

Both men and women worry, but particularly the woman is more apt to worry about the financial affairs and other affairs concerning the home than the man. You know that worry grows and grows. You can worry harder on the third day than you could on the first. It does not pay to worry.

The fourth commandment is this:

"THOU SHALT KNOW FOOD VALUES."

Every woman today should know how to feed her family scientifically and right. The woman who does not know food values may be sure that the handwriting upon her wall reads: "Weighed in the balance and found wanting." Every woman today can get much information from the state university, from the United States Department of Agriculture and from women's magazines, so she should know all that there is to know today about foods. You cannot be today like the woman in the settlement who told me, after a long demonstration, where I had thought I had driven my point home very carefully and accurately and had convinced the people about the right kind of foods to eat, "Oh, it is all right for you food specialists to come here in the settlements and try to teach us to eat what we should eat, but you know I would rather eat what I would rather." [Laughter.]

People have peculiar ideas about food. In this town there is a man that has a peculiar idea about food, because I asked him this year if he had put up as much sauer kraut as last year. He said, "No, we didn't put up very much this year. We only have two barrels in the basement in case of illness in the family." [Laughter.]

That was his idea of a good food for the sick, and there are many women who have just the same idea about food. No woman can afford to be careless about food, because the mental and spiritual lives in her home depend upon the food that the family eat three times a day. Food is changing. Food ideas are changing. Food standards are changing. Take for instance this new thing that we have been reading about in all the magazines and that we hear about from the platform, the vitamins that are found in foods. It was my great pleasure a few months ago to have a long talk with Dr. Funk, the man who isolated and named vitamins. It is not Mr. McCullom, as so many think. Dr. Funk is the man who did the original work and Dr. McCullom finished and carried it on. Dr. Funk said, "We did not know very much about these mysterious vitamins. They have always existed in foods, but we did not know they were there. Now we know they are there, and if the home maker will see that her family every day gets a dairy product, a fresh fruit, and a fresh vegetable, they will get the vitamins whether they want them or not." So it comes down to just a balanced ration for the family, the same as a balanced ration for the cattle.

Dr. Funk has a boy six years old and they call this boy the Vitamine Baby. Ever since the boy was born he has had a tablespoon of cod liver oil every day of his life, because Dr. Funk says that there are more vitamins in cod liver oil than in anything else in the world, and this child has grown to like cod liver oil. He goes to his mother before every meal,

opens his mouth and takes a teaspoon of cod liver oil before he takes his meal, and he does not have colds. Dr. Funk says that if the mothers wish to keep the children from having colds in the winter months to give them cod liver oil and they will thrive on it.

We say, "Very well, we can give fruits and vegetables in the summer time, but how about the winter time?" There is a great tendency towards meat, potatoes and pie in the winter time. The only way that you can have the vegetables and fruits in the winter time, if you have not access to good markets, is to store them, dry them or can them. The most popular of all is the canning,—and now I have started on one of my hobbies. Tonight I overheard a woman say, "I wonder what Mrs. Gray is going to talk about?" and the other woman said, "Canning. That is all she knows." [Laughter.] So I will talk a little on canning, for evidently that is something that I should know about.

Canning is a wonderful thing and we should do more than we do. One man tonight said, "I wish you would talk about canning, because I think my wife ought to can more than she does." That is the only way you will get a big variety in the winter time. We can can fruits, all kinds of vegetables, and all kinds of greens. We can a good deal in the summer time for that is when those things are in season, but not only do we need to can fruit and vegetables but we can go into the animal kingdom. There are women now who are canning meat, and they would rather preserve meat in cans than in any other form of preservation. Canned meat is delicious. We should get into the habit of preserving our meat by putting it into cans, either glass jars or tin cans.

At Arthur, Illinois, there is a very interesting family. Some of you know Mr. and Mrs. Seass. Mr. Seass used to be on the State Institute platform. They turned an old building into a cannery and there they can everything that grows on the farm. Not long ago Mrs. Seass was telling a Chicago woman that they had just finished canning a whole beef. The woman was very much surprised, she was amazed. She thought a while, then she said, Mrs. Seass, did you say you canned a whole beef?" Mrs. Seass said, "Yes, we finished it last week." The woman said, "Well, I suppose I shall have to believe you, but where in the world did you get a can large enough for a whole beef?" [Laughter.]

The other day a woman that many of you know in Illinois told me that she had made more money from her canning last year than her husband did from any other part of the farm, and he has a very large farm. She has turned it into a paying proposition. Therefore, ladies, it is a thing that is worthy of consideration. You can make money by canning. Anyone is glad to buy home canned products and pay a good price for them.

There are many other things that can be said about canning, and this is just a little suggestion I want to leave with you to think about the possibilities in this canning field. I want to tell you about the man in Chicago who was clever enough to realize a possibility along that line. He saw every Saturday these hundreds of chicken feet being thrown away by the butcher, so he said to this butcher, "Will you save me all the chicken feet that you have left from the Saturday's chicken sales?" And the butcher consented to save all the chicken feet. The man steamed them so the skin could be easily removed, and he found after cooking them he had a lovely gelatine soup. To this he adds rice, and it is now on the market as home canned soup, and he is making money, and he says he never made money so easily in his life.

The next commandment is,

"THOU SHALT HAVE LABOR-SAVING DEVICES."

We cannot dwell on all the different labor saving devices, only to say to the men that they should see to it that the women have just as convenient tools in their homes as they have in their work in the fields, or whatever profession they are engaged in. The labor saving devices save time, save money and save fuel. There are many of them and every woman is justified in having them.

The sixth commandment is:

"THOU SHALT NOT CLEAN AND DUST ALL THE TIME."

So many women are cleaning and dusting all the time that their house is never clean. It doesn't pay to do that. You can have a very comfortable and lovable home which is much nicer to live in than an immaculate home where there is never any dust. If it is a choice of doing the dusting and cleaning or going on a trip with your husband and children, why, do the latter, by all means.

The seventh commandment is:

"THOU SHALT LOVE THY HUSBAND AND CHILDREN MORE THAN THY HOUSEHOLD FURNISHINGS."

A great many women idolize chairs, davenports, doilies and what not, to such an extent that the woman and husband do not enjoy the home as they should. Just remember that the furniture is a material and can be replaced,—the husband and children cannot. Let us have more parties, more candy pulls, more fun in the home. Let the social life be in the home rather than in doubtful, questionable places.

The eighth commandment is this, and applies to the women:

"THOU SHALT HAVE THY OWN CHECK BOOK."

It is the women who are clapping now. Every woman should have either her own allowance, her own checking account or a mutual checking system, because she has earned the money in that home the same as the man who has labored in the fields, or the doctor or the lawyer. Therefore she should have access to this mutual money that has been earned in the home. We should train our girls in business ability so that when they are married they will be able to manage this check book and will not be like the woman who was very indignant when she received a notice from the bank that she had overdrawn. She went to the bank very haughty, threw down her check book and said, "This is a mistake because you can see how many checks I still have in this book." [Laughter.]

The ninth commandment reads:

"THOU SHALT HAVE A HOBBY."

Everyone should have something they are interested in outside of the daily routine. It may be canning,—that is a lovely hobby; it may be chicken raising, it may be bee keeping, it may be golfing, it may be many things. Something that you like to do and it takes you, as I say, out of the daily routine. A woman can run a home, and run it efficiently, and still have time for a hobby. A woman can do many things, as we proved to you during the war. Some of the directors of this institute have to be educated along that line. I was in the town of one of your directors and I was going to talk on the subject "Woman's Sphere", and this is the way he introduced me: "Mrs. Gray will now talk on 'Woman's Sphere, or the Kitchen.'" [Laughter.] I got up and I said that I was surprised that he would make such a remark, because he had such an intelligent wife. But he is educated now and I am sure he will never make that mistake again, because a woman can run the home and have this hobby besides. She can be like the man who was a poet and went farming much against the advice of his friends. They said, "You can't run a farm, you are only a poet. You will be a failure as a farmer." The first Christmas he sent his friends some lovely pork and also some beautiful lines of poetry. This is what he said: "Accept these products from my pens. I can wield two kinds of pens, a pig pen and a literary pen." So we women can do more than one thing. We can manage a home and ride a hobby at the same time.

The tenth commandment,—and now I know who is going to clap,—is this:

“THOU SHALT NOT DRIVE THE AUTO FROM THE BACK SEAT.”

In our institute work we often have to take long drives, such as Dr. Wilson told you, and we usually ride in the back seat with the hostess. The host drives the auto and he is constantly told from the back seat that there is a load of hay coming, that there is a curve to the right, that there is a ditch to the left, that somebody is trying to get by the auto, and the whole lovely trip is spoiled because the woman in the back seat insists upon driving that car. If she would only be quiet and tell me about the lovely scenery, about who owns this farm or that farm, we would enjoy the ride very much more. It is a lack of self-control, and I want to urge the women of this state to learn to control themselves so that they will not drive the auto from the back seat.

There was a young man who was starting out to talk and he went to his uncle for advice. He said, “You are a great speaker, Uncle, I wish you would give me the rules that you follow to make you the successful speaker that you are.” The uncle said, “There are only three rules to follow. The first one is this: if you have anything to say stand up so people can see you; second, talk up so they can hear you, and the third and most important one of all is to shut up so that they will like you.” [Laughter.]

And that is what I am going to do now. I thank you. [Applause.]
Vocal duet.....Doris and Dorothy Sites

Dr. WILSON: It isn't very many years since you took our boys and girls away from us and put them out into the little red school. The time has come when we realize you have done the best you could as men and that you need some help in reorganizing the little red school. We have responded to the request from a number of people that Mrs. H. M. Dunlap, who has made such a serious study of this matter, might bring to you the message which she brought to us this week. We have been asked for it a number of times. We feel you ought to have it, and we are glad to have the time and Mrs. Dunlap with us to give it to you.

OUR RURAL SCHOOLS.

(Mrs. H. M. Dunlap.)

During most of my life I have been connected, more or less, with the rural school. I attended the rural school. I taught in the rural school, and I taught in the rural school three years after I was married. I sent my little girl to the rural school, and I have been a director in the rural school for twenty years, and I believe I know something of the life in the rural school; and today the rural school is one of the greatest problems that America has to solve. But she is beginning the solution of it.

James Tigert, United States Commissioner of Education, in his annual report says: “More than two-thirds of American schools are rural schools, and they are the most unsatisfactory part of the public school system.” He says: “We have an educational crisis in the number of our people who cannot read and write nor appreciate the principles and ideals of our government.” He also says: “The greater part of native American illiteracy is in rural regions.”

The last census gives the total number of persons of school age, between 5 and 20 years of age, to be 33,250,870, with 21,373,976 in school. Over one-third of those that should be in school are not there.

Something has been lacking in the nation's educational outlook when it has permitted for so long a time a community and state indifference to the education of their people for self-supporting, intelligent and efficient citizenship. Perhaps the nation has been wise in the past in not extending its interest to the education of its citizens through the states, as already, when it does see a greater need for its interest in the national education, by

some it has been deemed unconstitutional in its efforts and plans. Be that as it may, let nothing deter the nation and the states from approaching the present day educational outlook with great freedom of thought and the true spirit of co-operation for the best for all those concerned, that ignorance may be overcome and every citizen may have and be required to obtain that education which will fit him to meet life's requirements in the most satisfactory manner to himself and those depending upon him.



Mrs. H. M. Dunlap.

Usually I am proud to be a citizen of Illinois. Again, I wish I could belong to Iowa, Indiana, Ohio, Minnesota, or some other of our states that have had a practiced and more desirable attitude towards its rural schools. The Illinoisian, when he becomes informed as to our position in regard to our rural schools, should be disappointed and full of chagrin. If he is not, he needs some kind of a bomb exploded under him to awaken him from his ignorance and lethargy.

Lately I have been reading of what has been accomplished by other states, and my full sympathy is extended to the rural boys and girls of Illinois that they belong to a state so rich in its agriculture and manufactures and minerals, and yet are burdened by a seeming neglect of its parents and educators in our rural schools. Fundamentally parents are responsible for the schools, and not our educators and teachers. Parents can have just what they are willing to pay for and work to secure.

WHERE ILLINOIS STANDS.

The only way I have of showing Illinois' position in regard to her rural schools is by comparing her with other states. Facts are disconcerting at times, but they should make us think, and we should work them out to a logical conclusion, whether we want to or not. So treat the factors in regard to Illinois' rural schools and I believe we should have a great awakening that would soon place our state along the side of some of our neighboring states in rural education.

The first consolidation of one-room school houses for the definite purpose of securing better educational facilities was in Montague, Massachusetts, in 1875; almost fifty years ago. Today just one-fourth of Massachusetts schools remain to be consolidated.

Slowly the idea spread into Connecticut, Maine, Vermont and Rhode Island. It reached Indiana with her first school in 1889, and Ohio in 1892. Those two states have certainly found them a success, as they lead in point of numbers of such schools of all the states.

We find the work has progressed very slowly, as most of the work has been accomplished in the last ten years. And now comparisons must follow, that I may show Illinois' position before the nation. In 1921 Indiana had 1,000 consolidated schools—Illinois had 15! Ohio had 800—Illinois had 15. Oklahoma, a new state comparatively, had 240—Illinois, a much older state, had 15. Mississippi, one of our southern states, limited as to finances, had 625—Illinois had 15. Tennessee this last year, in face of all financial difficulties, built 48 consolidated schools and has, all told, 308—Illinois had 15. Iowa, with no better roads than Illinois, had 400 consolidated schools—and Illinois had 15—and so I might go on naming every state in the Union as being more progressive than Illinois. A. B. MacDonald, writing for the Country Gentleman, January 22, 1922, places Illinois the lowest in point of interest and advancement in consolidated schools.

I know some of you are thinking that you have consolidated schools. You have your township high school, but township high schools are not consolidated schools. You still have those one-room country schools, with your two sets of directors and two sets of taxation for schools. We want to do away with those. Make your township high schools into consolidated schools, and abandon all those one-room school houses, where you have neither good teachers nor the correct surroundings for the children. [Applause.]

After stating these facts, I believe I know what some of you are thinking to yourselves in defense of Illinois. This one is saying: "We cannot have consolidated schools in our community because our roads are too bad." If so, go to work and have them made fit for consolidated schools. See that you have the right kind of supervisors, then agitate good country roads until you get them. Have road days several times a year. Make a gala day out of them, with a fine dinner prepared by the women and some good times thrown in with the hard work. Good oil roads are always possible with proper grading and an intelligent use of the oil. Where there is a will there is always a way. Nothing should be impossible to the father and mother that have the future welfare of their boys and girls at heart.

Another is saying: "We cannot *afford* to have consolidated schools." Now, be honest with the thought and study it pro and con, and if so, I am sure you will say: "We cannot afford to be without them." [Applause.] You certainly wish the best in education for your boy and girl, and you know it is impossible to have it in the neglected, unattractive, ill equipped one-room school house. Better fit your boy and girl to take care of themselves through some useful line of activity and an education that fits them for life than to leave them dollars or acres of land. [Applause.]

Why can you not see that not a dollar can be taken into the future, but, women, we can take the souls of our little girls and boys into the future! You know it has been said that if we could have children from the day they are born until they are 12 years old, the world can have them after that. Why don't you see that the most important period of a child's life is from the time he can begin to toddle until he reaches that age of 12 or 14? Why don't we have the very best training and the very best schools for our boys and girls at that time of life, and we cannot have it under present day conditions in the country. It is utterly impossible.

EDUCATION OR FOOLISH LUXURIES?

"Cannot afford it," you say? Cannot afford it, when America spent for luxuries in 1920, \$22,700,000,000; more than twenty-two times as much as we spent for education in 1918 and \$6,000,000,000 more than we spent for education in all our nation's history of 300 years! Some of these luxuries, such as face powder, cosmetics, perfumes, soft drinks, cigars, cigarettes, tobacco, snuff, chewing gum, ice cream, candy, joy rides and pleasure resorts, we could dispense with and be the better for the practiced self-denial.

What couldn't we do for education in America if we could have the nation for one week practice self-denial in some of these luxuries that they think they are obliged to have! Don't say you cannot afford it. When we look at the county of Champaign and think that it is the third county in the United States in its value of agricultural products, and yet not a consolidated school within its boundaries. Some earnest efforts have been attempted, but failed because some few thought more of their dollars than of opportunities and proper training for the boys and girls for successful home making and citizenship.

Some of you are thinking of the transportation and the difficulties to be met and overcome. But it has been found that when that difficulty is weighed in the balance, the moral and physical side of the scale far outweighs that of all the obstacles to be overcome.

I could continue reading your minds as you think out difficulties that you believe are unsurmountable, but I must hasten to give you some things that will prove how great an advantage it will be to your community, your

home, and above all, to the future success of your boys and girls, when you have a first-class consolidated school in your community.

I wish I could transport you, as I have been transported, to some of our consolidated communities, through the printed word and pictures, and I feel assured that your interest and enthusiasm would be awakened, so at least you would begin the agitation and work for a consolidated school in your midst.

SOME CONSOLIDATED SCHOOLS.

Let us go to Tate County, Mississippi, and view some of their large two-story school buildings, with a large group of pupils in front, ranging from the 6-year-old to the senior in high school. You know by the looks of the buildings they contain the equipment for all the educational needs of the country boy and girl. They are beautiful, sanitary and thoroughly equipped to meet the needs of the child.

When J. T. Calhoun, state rural supervisor, was asked, "Are the consolidated schools having any direct effect on farm life?" he replied: "Yes, not only on farm life, but very often their influence permeates the whole life of a county. Tate County people are using their schools to redeem the county from an unsound business and farming system."

When J. B. Snider, Jr., editor of one of their papers, was asked about the financial condition of the county, he said: "Yes, we are hard hit. We expected it; knew, in fact, that we could not escape. But—and here is the reason we are not downhearted—we are building so this sort of collapse cannot happen again. When I say we are building to escape future calamities I refer to the schools." He means that their boys and girls are to be educated in diversified farming and to love to work as well as in book knowledge. Surely they are building well for the future.

R. D. Jacobs, principal of one of their consolidated schools, says: "Our school serves as a center for all the social and business activities of the district." He gave it the title of "a service station for the community; a place where everybody in the district can come for information and help."

Couldn't we soon remove ignorance from the world if we could have that kind of a school in every community? And it has been said that all of the unrest, dissatisfaction, the hate, the envy, the jealousy, the divorces, the ill health—all of the difficulties and problems of life have two great causes. These two causes are ignorance and selfishness. Ignorance must be replaced with knowledge through a right school and home training, and selfishness overcome by the spirit of service being developed for our fellow-man and our love of God better demonstrated through this service. That is the only way we can ever do it. [Applause.]

I should like to transplant you to a \$225,000 consolidated school in southwest Kansas, in a rented farm district. It is an irrigated district, where many acres of beets are raised. Surely, if they can build a building like that for the present and to meet their needs for some time in the future, Illinois can do equally as well, if she thinks so, but in many instances the needs of a community can be met with much less expense.

All of the boys and girls in the whole community are being educated in a school that has no superior anywhere. Many of the children are Russian and Mexican, with Italian and Greeks. The parents of these children, many of them, objected to sending them to the school the first year, as they wanted them to work in the beet fields, but when they saw what it was doing for the boys and girls, they said they would not keep their children out any more, as the school was worth more than the beets.

But there it is not all book knowledge. The book knowledge is there, but it is applied every day and every hour to the child, and they have to learn to work as a part of their educational training.

And this is what it does for all the children in that range of school territory. They have a Smith-Hughes agricultural and manual training instructor. They train on a twelve-acre tract in practical farming, in the very soil and climatic conditions of that part of the country. In raising the kind of crops and live stock best adapted to that region. They make prac-

tical farmers of them, and in their manual training department they teach them how to make and repair farming tools and implements and the common things that are used about the farm. The girls are taught domestic science, art and music. They teach them cooking, sewing and all branches of farm housekeeping. They are especially proud of their music department, where they give piano lessons to the individual, have classes in the violin, and teach vocal music and singing in chorus. They tell how marvelously they have progressed, some of these boys and girls, with their music, because many of our foreigners have much natural ability in music. Their music is helping them in training for their citizenship.

If every county in Illinois could have—and they can—a record like Randolph County in Indiana, we would soon obliterate many of our state and local problems. It claims it is the greatest consolidated school county in creation. Seventeen big consolidated schools out in the open country, with big gymnasiums and auditoriums! They have only six one-room schools in all the county, and expect to get rid of four of them this winter. All but a few of the children in the county are carried to and from school in motor trucks heated in cold weather. They have nine school orchestras of farm boys and girls out in the country. Every boy and girl in the county that is big enough and able is in school, and 96 per cent of them go through the high school. The census lists less than 1 per cent of all the people in the county as illiterate.

This sounds as though the millennium was approaching in that county. Don't you think the boys and girls educated close to the farm and its life will remain upon the farms of that county, instead of going to town and city? I do, and they will not be grouchy, dissatisfied citizens, with a tendency toward socialism, but will be loyal, patriotic and most desirable citizens; citizens always ready to meet their country's needs and requirements.

It is like a fairy tale to read of what has been accomplished in Anderson County, South Carolina. John E. Swearingen, a blind man of brilliant intellect, who for nineteen years has been state superintendent of schools, caught the vision and carried it to the people of that county; they caught his vision, and now consolidated schools are springing up rapidly. So much pleased are they with results that the old way has no attraction for them, and they claim they have just begun the good work for the state.

Out in Colorado they have a large, beautiful building that is situated out in the open, that is just as much a consolidated church as a consolidated school house, and just as much a consolidated school house as a consolidated church. Nine different creeds are represented in the church, and the whole community is as one big family, united by their common interest in church and school. A Sunday morning service will bring four or five hundred people together. I wish I had time to tell you how it was all accomplished. Think of nine different denominations attending a church in a spirit of harmony and co-operation and good will, to do the work of the Lord!

WHAT WE SHOULD WORK FOR IN ILLINOIS.

I must not name more of the working of these wonderful schools, for you certainly must know from the few I have cited that when once established they are there to stay. Then why, oh, why is Illinois so slow in meeting her obligations to the rural boys and girls of our state, when they have been tried and not found wanting in value, and need no more proof of their value to us as a state or community?

Is it politics? Is it a cultivated indifference fostered by an over-amount of selfishness, or both? Something is wrong, and I put this question to the women of this meeting: Are you going to be willing to have your boys and girls deprived of opportunities that they should have because some one or many have failed to do his or their part?

Our educational life in the past has been almost entirely planned and directed by men, but today, women, the responsibility and duties of it are

going to be placed partly upon your shoulders. Are you going to meet them or not?

Women, we have something to work for that is worth while, and I wish all of the organizations of women in our state could at once place in action their combined strength in the greatest co-operative movement ever started in our state—the movement for better rural schools, through consolidation!

The things you will be working for are given in this summary of advantages of consolidation by one of our state superintendents of schools, who has had much experience in the field. I want you to let me read these to you and let them “soak in”—if I may use such an expression—so you will see how worth while they are to work for:

1. Increases the attendance.
2. Makes the attendance more regular.
3. Increases the enrollment.
4. Keeps the older pupils in school longer.
5. Provides high school privileges at one-third the cost.
6. Makes possible the securing of better trained teachers.
7. Results in higher salaries for better trained teachers.
8. Makes possible more and better grade work.
9. Improves industrial conditions in the county.
10. Enriches the civic-social life activities.
11. Conserves more largely the health and morals of the children.
12. Increases the number of eighth-grade completions.
13. Provides adequate supervision.
14. Reduces truancy and tardiness.
15. Develops better school spirit.
16. Gives more time for recitations.
17. Increases the value of real estate.
18. Produces greater pride and interest in country life.
19. Prevents the drift to the larger towns and cities.
20. Brings more and better equipped buildings.
21. Eliminates the small, weak school.
22. Creates a school of greater worth, dignity and usefulness.
23. Makes possible a more economical school.
24. Provides equal educational opportunities.
25. Gives much greater and better results in every way.

Recently I heard a man of position and recognized intellect say: “There is too much false agitation against the little red school house. I received some of my education there. It was good enough for me, and it is still good enough for the boys and girls.” He may talk it, but the forces of education and progress in every state are beginning to be arrayed against it, and it must go. [Applause.]

I am going to close with the indictment against it given in a recent speech by President Harding. He says: “We have just awakened to the fact that the education of the American child has fallen below the standard necessary for the protection of our future. We have to face the fact that our teachers are underpaid; that in physical training, in the teaching of American civil government and American history, in the principles of Americanism and Americanization we have been deplorably delinquent. But nowhere is there more cause for alarm than in the fact that the rural school term is far too short, and that four-fifths of the rural schools are one-teacher schools, resulting in hasty and careless teaching; and that the opportunity for country boys and girls to have high school education is all too slight. We owe it to the childhood of the nation, and to the childhood of the agricultural districts of our land, to place at its disposal the utmost in educational facilities.”

Women, are we going to help? Let's sacrifice some of our time and some of the things we can do without, and go back to our homes and look over our community conditions and see if we are not responsible for some of them—because we are—and let's pray as we have never prayed before for God to give us strength and courage and power to go out into

these country districts and bring to them a school that fit our boys and girls for life. That is what education should mean, and that is what we must do. [Applause.]

FRIDAY MORNING SESSION.

February 24, 1922, 9 o'clock A. M.

Male Quartette—Swedish Lutheran Church.

Invocation—Rev. R. W. Lindsay.

PRESIDENT MANN: The ultimate end of nearly all the crops that we grow is human nutrition, whether it be cotton, which is two-thirds ultimately human nutrition, or whether it produces wool, or all the other crops, either directly or indirectly, they ultimately reach the human stomach as food. We have now come to the time when we must give consideration to the economic production of human food. No forms of food which reach the human stomach in so palatable and so nutritious form as dairy products, and when we want to study on the economies in producing dairy products we go to Iowa and get Professor Kildee to come and tell us about it. Professor Kildee:

REDUCING DAIRY FARM COSTS.

(Prof. H. H. Kildee.)

MR. PRESIDENT, LADIES AND GENTLEMEN: It is a pleasure for me to come over to Illinois and meet with our neighbors who are interested in the same problems that we are interested in. You people are facing about the same conditions, you are meeting about the same situation that we who are farmers in Iowa are attempting to meet at the present time.

Your president, Mr. Mann, has very nicely set before you the situation and given me a very nice foundation upon which to build. In coming before you this morning it is not my purpose to attempt to advise you. I know how people in any line of business look upon advisers. In regard to the agricultural situation what you need to do at the present time is to profit by the experience of other men who are leaders in successful business farming.

A few years ago during the war I was located in the state of Minnesota, and one day, after attending a dairy meeting, I was sitting in the lobby of a little hotel waiting for the evening session. There was a traveling man sitting near the stove not far from me. He was not an average traveling man, I would say he was not up to the standard, but this man was attempting to tell everyone in the room just what was wrong with our conditions, just why potatoes, corn, meat and everything



Prof. H. H. Kildee

else was so high, and he was blaming everything upon the farmers. He said the farmers were letting the potatoes rot to keep the price up. He knew everything about everything that was to be known, evidently. A good, solid, prosperous looking farmer sitting near stood it as long as he could and finally he turned to this man and he said: "I may not know as much about the general situation as you profess to know, but I can tell you how to bring this war over in Europe to a close inside of thirty days." The traveling man

said: "How would you do that?" The farmer said: "I would send all of the people who are going about the country advising the farmer and everyone else what to do, to the war zone and put them in the front line, and the Kaiser would throw up his hands in despair because he would not have enough gas masks to go around." [Laughter.]

I don't want you people to put on gas masks, I don't want to attempt to advise you, but simply want to talk with you relative to reducing the farm cost of producing dairy products.

What I have to say about the production of dairy products, what I have to say in favor of dairying as compared to other forms of marketing our farm products is not said to discourage the efficient production of other classes of farm animals. We need them all. We need a balanced animal husbandry and balanced farming in this country. We appreciate that at the present time the men who are producing pork, the men who are feeding the corn to hogs are getting a very good return from their corn as compared with the market price at the elevator. We realize that the lamb and sheep feeders are making money. We realize in the case of the beef cattle industry, the men who are using the best judgment and methods are making money. Of course, they have had one or two hard years. We might go further and consider the draft horse industry and others, but that is not my subject this morning.

SOME RECOGNIZED FACTS.

We do realize that the dairy cow is the most efficient and economic producer of human food of any of the farm animals. We realize she converts the farm roughage and grains into a very nutritious product. We know it is a product that is necessary from the standpoint of proper growth and development of children. We know it is necessary from the standpoint of the maintenance of health and proper nutrition of the adult.

We know furthermore that the dairy cow retains and builds up soil fertility better than we do it with other systems of farming.

We know furthermore that one of the things in favor of dairying at the present time is the fact that the dairy cow gives us a steady and dependable source of income, a thing which is certainly needed in Iowa at the present time, and no doubt appreciated by the farmers in Illinois as well. We find that with this situation before us even the most enthusiastic dairyman, if he be absolutely truthful, would have to admit that there are many unprofitable so-called dairy herds.

The fact that a man has a dairy herd, or has a reputation of being a dairyman does not mean that he should have unlimited credit at the bank, because we find that there are unprofitable as well as profitable dairy herds. In fact, I am sure that taking the country as a whole our dairy cows do not produce more than 50 per cent as much milk and butter fat as they could and would if we would follow the business methods of dairy farming that our most successful dairy farmers follow. You know it takes real brains to be a successful farmer of any type, certainly at the present time, and we realize that both dairy farming and livestock farming are real businesses that must be conducted upon business methods. We realize that in the case of some individuals who go about it in a rather slipshod way probably the law of averages helps them out to a certain extent. Men who are in and out of any business are likely to go in at the high time and out at the low. We have many illustrations of that in our state. If a man stays in a game he is best fitted for and gives it his best effort mentally as well as physically he is the man who will win out in the long run.

Speaking about keeping at it reminds me of a story that Clifford Thorne once told us of a soldier that was in the habit of betting. Probably the story has been told here. He said that this soldier would bet upon every occasion. He would bet upon anything that was suggested. He would bet with his buddies as they were marching down the road that the next horse they met would be a white horse; he would bet that the next girl they met would be a red-headed girl. He would bet upon anything with anybody. The captain thought that this thing had gone far enough, that this fellow was rather

Scrub cow 52, dam of
half-blood Holstein 69.

Average Production:
3742 lbs. milk
169 lbs. fat



Half-blood Holstein 69.
out of 52 and
dam of 281.

Average Production:
6701 lbs. milk
282 lbs. fat

Increase over dam of
79% in milk
67% in fat

Three-quarters blood
Holstein. 281 out
of 69

Average Production:
9409 lbs. milk
347 lbs. fat

Increase over grand-dam
150% in milk
105% in fat



ruining the discipline of the company. He called him in and he said, "Well, you'll have to stop this betting." The fellow finally said that he would try. The captain said, "Well, I think you need a little more moral persuasion. I'll send you over to the general." The private was sent over to the general's office. The general gave him a lecture upon the sin and the evils of betting, and the private seemed fairly well impressed, but as he turned to go out he said, "It's all right, general, I'll try to stop, but I'll bet you a hundred dollars that you have a mole on your right shoulder." The general said, "Why, that is preposterous! Why, that is beneath my dignity to bet with you on a subject like that." The soldier said, "Well, here's a hundred dollars." The general waved him away, and then as the private started to go out of the room he said, "Come back." He thought to himself he would teach this young private a lesson. So he put down his hundred dollars and he said, "I'll just bet you a hundred dollars. I just want to make this bet to teach you a much needed lesson." The private put down the hundred dollars and said, "General, take off your shirt." The general fumed and fussed around for a while and finally took off his shirt. Of course, there was no mole on his right shoulder. The general pocketed the private's hundred dollars and he said, "Young man, let this be a lesson to you. Stop your betting." The private walked out of the office, and pretty soon the general wrote a note to the captain and told him what he had done, how he had cured the young man of betting. The captain wrote back saying: "General, I believe you and I are the two biggest darn fools in this man's army. Before the private left my office to go to yours he bet me two hundred dollars he could have your shirt off in thirty minutes." [Laughter.]

So we realize we must stay by it, we must use our heads to win out. The private used his head and thereby he reaped the reward.

FACTORS IN PROFITABLE OPERATION.

In connection with the dairy business we realize there are four factors that enter into the profitable operation of a dairy farm.

First of all we have the quantity of production. The quantity of milk produced depends upon the cows that you have in your herd, it depends upon the feeding and management. One must have a healthy herd of productive individuals to get the best results. There is no question but what there are good individuals within each of our breeds. There are mighty good grades among each of our pure bred dairy breeds, but we realize that a man must have the productive individuals if he is going to get very far in the dairy business.

The second factor is that of quality of product. We must produce a milk that is sanitary, a milk from a healthy herd. We must consider the percentage of fat in that milk if we are going to get the best returns. That does not mean that the breeds such as the Holstein is under a serious handicap as compared with the Jersey or Guernsey, because you have the quantity of milk to make up for the difference in butter fat.

The next factor is the cost of production, and that is the thing I want to emphasize this morning. In feeding for economical production we must utilize of the farm roughages and feeds to produce milk in the most efficient and economical manner. We know it is possible to make big records. We can make larger records, no doubt, where we have unlimited capital available with which to produce the most palatable and nutritious feeds on the market.

The next factor that is receiving attention over the country in connection with agricultural products is that of the price obtained for the product, or the marketing. In the case of dairying we have our co-operative creameries, our Co-operative Milk Producers' Association, we have our cheese factories. We need much more co-operation of the right sort if we are going to put the dairying business and other farm industries across in the right way. Speaking about co-operation, it seems to me that too often the co-operation that we have in use nowadays might be described by the wording of a bill which was introduced in the Kansas legislature at the last session.

This bill had to do with regulating railroad crossings and intersections. The wording of the bill was as follows: "When two trains meet at a railroad crossing or intersection both trains must stop and neither train may proceed until the other train has passed on." [Laughter.] We find people waiting on one another in just that way in the co-operative enterprises, and many times the failure of a co-operative enterprise may be traced to that situation.

But how are we going to improve and increase the profits of the products of our dairy herds? First of all it is a question of weeding out the inferior animals, then it is a question of breeding them better, a question of judicious feeding, a question of maintaining the health and then the marketing of our products in the most efficient way. Those are the points that I would emphasize and the points which are emphasized by our most successful dairymen in putting the business across in a profitable way.

WEEDING AND BREEDING.

First, how are we going to increase the production of our herds through weeding and breeding? We have many illustrations, and doubtless some of you have them on your own farms, where people have made a wonderful increase in the production of their dairy herds by weeding out the inferior animals and by breeding their cattle better through the use of good pure bred sires, even if they have but a scrub or grade cow at the beginning. There has been much accomplished on that line. Thousands of records might be quoted from our cow testing associations showing the progress that has been made on that line. I simply want to cite the increase of one of our herds to bring to you just what was brought about in the course of three years' time.

In one of our cow testing association herds the production the first year that they kept the records was 5,665 pounds of milk, 207 pounds of butter fat; a net income over cost of feeding, not counting any labor, interest on investment, not counting the value of fertility returned and other factors, but the net income over cost of feed was \$22 per cow.

The second year, after weeding out the inferior cows and keeping records on them by means of milk scales, the production of this herd was 7,060 pounds of milk and the butter fat production was 251.9, which raised the net income per cow up to \$53.96.

The third year—in consecutive order—these cows averaged nearly 10,000 pounds of milk, and 341.9 pounds of butter fat, a net income over cost of feed of over \$75. That was brought about in just three years' time through weeding out the inferior cows, through the use of pure bred sires.

But the question is often asked: How can one who has what he knows to be a poor herd get the standard of production he should have in the shortest possible time? Of course that question could be answered by going out and buying the animals. We realize in that connection that many people have been disappointed. Doubtless you people can point to illustrations where people have gone out and paid a lot of money for good grade cows or pure bred dairy cows, cows that were known to be good producers, they have brought them in and in many cases they have been careless in regard to guarding against the introduction of diseases, they have been careless in feeding. They may have the cows but not have the other facilities in the matter of feeding and management necessary to put the herd across on a profitable basis.

We find many of these people going into the business have the cows, they have the interest, they have the desire to become dairy men, but they don't have the knowledge of feeding and management, they do not have the equipment necessary, and that is just the sad part about it.

PURE BRED SIRES PAY.

To what extent can we increase the production through the use of good pure bred sires upon our scrub herds? To answer that question the Iowa experiment station some years ago bought a lot of scrub cows down in the hills of Arkansas and they were brought down to the station. We have

records on those grades for ten or eleven years, and I want to show you a few photographs.

As the cows came to the Iowa experiment station they were in about in this condition (exhibiting photograph), looking rather sad and dejected. She had pep enough to go to the barn and get her feed, but that was about all. Her first year's record was 131 pounds of butter fat. Here you have the same cow three years later. You notice the great increase in her development. This cow produced twice as much butter fat at the end of her third year at the station. She was a mature cow when she reached the station.

Then pure bred sires of the different breeds were used on these scrub cows. No attempt was made to compare the different breeds of dairy cattle in this connection and the records that are shown here should not be taken as a comparison, because the daughters of the pure bred Guernsey bull are not out of the same dams as the daughters of the pure bred Holstein bull; excepting in a few instances, but not in enough cases to make a comparison. And then we found so much variation between the pure bred sires of the same breed in their ability to increase the production of their grade daughters over the scrub cows. We found one pure bred sire that did not materially increase the production of his daughters over the scrubs and the next bull of that same breed increased the production of the two year old daughters over the same scrub dams as much as a hundred and thirty per cent in butter fat.

It is not a question of breed, it is a question of individual. Even though we use bulls upon a grade herd we must consider that matter of productive inheritance and the ability of the bulls to increase the production of the animal.

Here we have an old scrub cow, one of the better ones, and therefore her daughter does not show as large an improvement in the amount of butter fat as in some of the other cases. She produced 233 pounds of butter fat. That is better than the average cow in Iowa produces. But this cow was just a calf when she came to the station and she was developed under the same conditions as the pure bred dairy animals in that herd. She had some advantage there over some of the other scrub cows.

Here is a half-blood Jersey out of this same cow. This half-blood Jersey as a two-year-old produced 325 pounds of butter fat. She also shows great improvement in type.

Going to the next generation, the second generation, or the three-quarter blood heifer from the same scrub cow foundation, we have a record of 360 pounds of butter fat, thus the two-year-old heifer was producing enough butter fat to qualify a mature cow for the register.

Now as to the selection of the sires used. First of all let me say that this increase in production was secured by using no better sires than the average dairy farmer can afford to buy. The bulls we used on these scrub cows and used in siring the three-quarter-bloods were bulls that could have been bought from around one hundred to two hundred and fifty dollars. We may think a hundred dollars or a hundred and fifty dollars a good price for a pure bred bull calf, but when you stop to think about the possibilities of the investment from the standpoint of the milk and butter fat you realize it is money well invested.

Here we have a Holstein bull which is now at the head of our herd. Probably some of you have seen him, a first prize bull at Chicago as a two-year-old, but the bulls that we were using at the beginning were not as good bulls as these. We find that bulls of good type are necessary. We must have a combination of type and production if we are going to put our dairy cattle across in the best possible way.

Here we have another one of the scrub cows. You notice the shallow body and rather steery head, and the udder about the size of a goat's udder. She produced 178 pounds of butter fat.

Here we have her daughter that produced as a two-year-old 287 pounds of butter fat, an increase of 90 per cent in milk and an increase of 64 per cent in the amount of butter fat.

Scrub cow 33, dam of
half-blood Guernsey 87.

Average Production:
4339 lbs. milk
183 lbs. fat



Half-blood Guernsey 87,
out of 33 and dam
of 296.

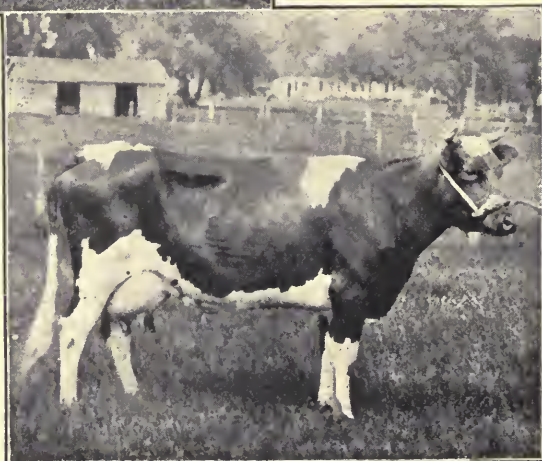
Average Production:
4213 lbs. milk
180 lbs. fat

Increase over dam of
3% in milk
2% in fat

Three-quarter blood
Guernsey 296,
out of 87.

Average Production:
9107 lbs. milk
435 lbs. fat

Increase over grand-dam
110% in milk
137% in fat



Then we go one more generation, the three-quarter-blood, marked as true as any pure bred Holstein. She produced 474 pounds of butter fat. There is just one step, one link in between this 474 pound producer and this 187 pound producer. It tells the story of the value of the pure bred sire.

Now you people can all point to illustrations in your community where pure bred sires have given similar returns in the butter fat, but can we be sure that the feeding and management of the cows at the beginning were just the same as the feeding and management of these grades later? And so that is the object really of this piece of experimental work, to separate those factors.

Here we have one of the scrub cows, a steery appearing individual, and yet she produced 183 pounds of butter fat. We know that there are some scrubs in all of our breeds that are registered, so we must go further than simply buy a pure bred animal.

Here is the heifer by such pure bred animal. There wasn't much back of him by way of production, but he was used simply because a few Guernsey breeders in the state at that time, quite a number of years ago, were anxious that we have some grade Guernseys as well as grade Holsteins and Jerseys, but the bull did not increase the production to any extent. In this case this heifer produced 2 per cent less pounds of butter fat than did the scrub cow.

Here we have the next generation from this same foundation. Here is the grand dam. You have just seen the dam. The dam produced a little less than the scrub grand dam of this heifer, but this heifer produced as a two-year-old 435 pounds of butter fat, and she is a good type grade Guernsey heifer. There you have the story. There is just the one link between. This link comes between no increase, in fact a slight decrease, and then this big increase in production.

We might go farther in regard to that, but it is not necessary, and the statements I make relative to the records apply to all breeds, but I do want to give you, if I may, just a statement relative to the summary, where we took all the scrub cows, took all the scrub daughters and took all of the granddaughters, or the three-quarter-blood heifers, grade Holsteins, grade Jerseys and grade Guernseys. All the scrub cows that came to the experiment station averaged 3,900 pounds of milk and 185 pounds of butter fat. The half-bloods or daughters out of those cows bred by pure bred sires, produced 5,619 pounds of milk and 261 pounds of butter fat, an increase of 44 per cent in milk and 41 per cent in butter fat. The next generation, the three-quarter-bloods, produced 8,507 pounds of milk, that is the second generation grades, and 379 pounds of butter fat, or an increase of these granddaughters over the granddams of 117 per cent in milk and 105 per cent in butter fat. So we have that increase brought about in that short time.

HOW FEEDING INCREASES PROFIT.

So much for the weeding and breeding. Just a few words in regard to the feeding. It seems to me that one of the greatest sources of loss in connection with feeding our dairy herds on the farm is the fact that too many people feed all cows alike regardless of production.

In one of our Iowa herds a couple of years ago the cow tester in checking up the work at the end of the month of December found a man who had milked ten cows for that month, had received a profit, or rather a net income over cost of feed of \$2.47. In other words he had milked and cared for these ten cows for the full month of December and received in return a net income of 24 cents per cow. The cow tester knew that the man was not dairying simply because he loved the cows. He knew the man wanted the cows to keep him rather than he keep the cows. We have too many people keeping cows instead of the cows keeping them. The cow tester suggested that the farmer change the method of feeding, that they start feeding the cows in proportion to production. He suggested that they start grinding the corn and oats, and he suggested that they feed a little better roughage than they had been feeding. So they made these changes in the ration, and for the month of January, with the same ten cows, none of them had freshened in

the meantime, the same cows returned a net income of over \$47, as compared with \$2.47 for the month previous when butter was two cents per pound more.

So we find many illustrations along that line which show that one of the greatest losses of our feeding comes through the feeding of all cows alike, regardless of production. We find we must feed the animals for maintenance plus the production, because the dairy cow is a small manufacturing plant. We don't want to feed the inferior machine twice as much as it needs and thereby waste 50 per cent, and the good machine must have that which she can handle most efficiently and economically. So we find if we feed about one pound of grain to each three or four pounds of milk produced we get much better returns from the dairy cows that are milked in this state and ours, and throughout the country. Feeding in proportion to production is all important. You find if you travel from coast to coast very few feeds are used out on the Pacific coast that are used on the Atlantic coast, but you will find the same principles apply. You will find the same characteristics and you will find the feeds must be palatable, you find that the cost of feed must be emphasized, you find the effect of feed upon the system must be given careful consideration if we are going to get returns. We find a ration of about four parts of corn to about three parts of ground oats and two parts oil meal or cottonseed meal used in connection with your corn silage, your clover or alfalfa, and fed about one pound of the grain mixture to each three or four pounds of milk will give good returns.

THE QUESTION OF HEALTH.

There are just one or two other points I wish to bring out in conclusion. I do not want to bore you to death with rambling remarks. We find that not only must we consider the breeding, the weeding out and the feeding, but we also have the question of health to consider. We are all on about the same basis. We have the federal accredited herd system that is coming into more popular favor throughout the country. People are coming to realize the advantages of having the herds federally accredited, and put upon the basis where they know the animals have been tested by competent veterinarians. We find that not only must we eliminate the tuberculosis in the herds, but we must pay attention to abortion and other troubles. We find that a business dairyman who takes sanitary measures, who is careful in isolating animals which had just been brought in the herd, who tests his herd, has very little trouble along these lines. We realize that this is something that must be given consideration whenever animals are brought into the herd, and must be carefully considered in connection with the management of that herd.

In addition to these points there are some things that affect the production materially other than feeding. We realize proper milking of the cows has much to do with the production. A man might have an expert feeder, the best in the country, and yet put a poor milker on the job and his cows won't produce what they should. The cows must be properly milked if they are going to keep up the production through a period of time.

Then we find in the summer time a great many cows decline in the milk flow because they are forced to contend with the heat and to fight the flies. We find the successful dairy farmers all over this country are paying attention to giving the cows some protection from the heat and flies in the summer. There are many ways of doing this, therefore they are getting better returns from the feed consumed by those cows.

We find regularity in feeding and regularity in milking are emphasized by successful dairy farmers.

Then there is the matter of kindness. We find some farmers who become irritated very easily and quickly, who curry the cows with the milk stool instead of the curry comb and brushes. We find those people seldom stay in the business very long or seldom are successful. We find the dairy cow must be treated kindly, must be handled in an efficient, quiet manner, if we are going to get the best results. There is no hocus-pocus or slight-of-hand trick

Scrub cow 53, dam of
half-blood Jersey 213.

Average Production:

5259 lbs. milk
234 lbs. fat



Half-blood Jersey 213.
out of 53 and dam
of 398.

Average Production:

4275 lbs. milk
226 lbs. fat

Increase over dam

19% in milk
3% in fat

Three-quarters blood
Jersey 398, out
of 213.

Average Production:

6723 lbs. milk
371 lbs. fat

Increase over grand-dam

28% in milk
59% in fat



about successful dairy farming if you will follow the business methods in the selection, in the feeding, in guarding the health and in marketing the dairy products.

As I look over this crowd, while I am not a mind reader, I think I can tell what thought is uppermost in the mind of each and every individual here. I think you are all wondering right now, as did a young lady who visited our dairy farm not long ago. This young lady evidently had not been raised upon a farm, especially on a dairy farm. She knew little about the operation of milking. She walked around, she sized up some of the boys who were milking the cows, and finally she said, "I can see it is a simple process, I can see how it is done, but tell me, how do you shut it off?" [Laughter.]

I assure you I have enjoyed meeting with you. In case there are any questions on the feeding that I can answer I will be glad to attempt it. If I can't, probably there are some successful farmers who can. I thank you. [Applause.]

Q. How about grinding the corn for dairy cows? What would be the value in that?

PROF. KILDEE: In regard to the preparation of corn for dairy cows. We find it does pay to crack the corn. We find it profitable, even at the present prices of your corn and labor, to prepare it in that way, if the dairy cows produce milk. On the other hand we found that dairy calves, from the time they started eating grain up to the time they come into production, in the case of heifers, they prefer and give better returns from the shelled corn than they do from the ground corn. In the case of the dairy cow we found the best results from the cracked corn.

Q. In northern Illinois and southern Wisconsin, the great dairy states of this country, there is a great amount of milking machines. It is said that the farmers are having a great deal of difficulty there in cleaning the milking tools, and if they are not improved we will have to reject the milking machines. I want to ask if you expect the time to come when milking machines will be perfected?

PROF. KILDEE: I would answer in the affirmative. I think there is no question but that the milking machine is a factor of importance where we get one that is properly constructed.

Q. Would it pay at the present price of oats to haul it to town, pay 10 cents a bushel to have it ground, and then take it back and feed it to the cattle?

PROF. KILDEE: No, at the present prices it would not pay, but I do think that a small feed grinder is a mighty good investment upon the stock farm. Where you don't have the power and grinder it would not pay.

Q. Where hay is not plentiful would the feeding of more silage be profitable?

PROF. KILDEE: To dairy cattle?

Q. Yes.

PROF. KILDEE: Yes, sir. I believe it pays to feed more silage. In fact at the present price of corn many of our farmers, and I know some of the Illinois farmers, are refilling their silos with corn fodder. We find that the silage is an excellent substitute for a part of the hay, simply an increase in the silage to cover the dry matter required.

PRESIDENT MANN: I think there is no question but what the dairy cow is the most wonderful machinery in the world, the most wonderful manufacturing plant in the world. What does she manufacture? Food; milk. What is milk? First, it is lime water. Why? Because we need lime water to build and maintain the bony structures. We need lime water to preserve the proper reactions of the body. We need lime water as a protection against some of the things which injure us. And now they are finding when cows have plenty of lime water they take care of that germ of "T. B." in their system, take care of it there. Then the animal body must have the proteins, perfect proteins, proteins which build every part of the body tissues and maintain every part of the body tissues. I don't know of any more perfect protein than that contained in milk. Then we must

have the fuel, those things which we must burn. That is what milk is,—bone forming, tissue forming and maintaining, and energy giving.

Now how can a cow make those things? How can she make lime water out of corn? You would have to feed a ton of corn to get a pound of lime, or she would have to eat a ton of alfalfa to get 150 pounds of lime. So the whole thing resolves itself largely on the appropriate use we make of the cow in her manufacturing work.

Another animal is the beef animal. We are studying economies this morning, economies of production. Professor Kildee has told you about the economic production of dairy cows. Now we want to know something about the economic production of the beef problem, so Professor Cochel will treat on economies of the beef. Professor Cochel is from the American Short-horn Breeders' Association, Kansas City.

ECONOMIES IN CATTLE FEEDING.

(Prof. W. A. Cochel.)

MR. CHAIRMAN, LADIES AND GENTLEMEN: The past year has not been a most favorable one from any standpoint to those who are interested in the production of beef, and especially to those who have bought cattle and finished them for market purposes. It is true that within the last three or four months a few of the cattle bought and handled have been very profitable. There is no need of us attempting to apply what we have learned in the past year and consider that as a standard to go by any more than there is for any other group of people to take the worst year in their history and use that as a means of measuring all the other years that they have to operate.

I am naturally a little bit of an optimist on the cattle business. I think that we have decidedly better days ahead of us than we have left immediately behind, and that this is no time for those of us who have spent our entire lives in the production of beef to consider that the beef business, or the beef industry has entirely gone to pieces.

There are three or four things which we should consider essential when we discuss the question of cattle feeding, cattle breeding or cattle management. Those are the functions which cattle are supposed to perform on the farms of this country. The first big job which cattle have on the farms of the United States is to furnish a market for our grass, our pastures. Some of the other crops which we can grow, and do grow, we can market (a portion of them at least) in their original form. Those of us who are interested in the production of grass, who own land that we keep in grass and in pasture, can find no other market for the grasses that grow naturally on our soils except through live stock. Throughout a large section of the United States we have to depend upon the live stock industry to furnish us a market for the one big crop which we grow.

One of the things that has been the matter with the corn market during the past year is the fact that there has not been a sufficient amount of live stock produced to furnish the usual market for corn that prevails one year after another throughout the Corn Belt. The same thing is true with the hay market. There is not a sufficient number of breeding cattle, nor of stock cattle in the United States today to consume the hay which we are producing. Week before last I was out on the western slope in Colorado and saw as fine alfalfa hay as I ever saw in my life offered for sale at two dollars and a half a ton in the stack. That was in a community where they normally handled about thirty-five thousand head of cattle. This year in that same community they have between fourteen and fifteen thousand, and more feed than they have produced in any one year in the last five. Naturally those men are looking forward to increasing their live stock holdings, increasing the number of beef cattle they have on their lands, in order that they may furnish a market at home for the crops that they produce. They realize that it is impossible for them to ship hay out of that community, no matter what the price, because in that particular section they would have to haul it a little over thirty miles before they would get to the first rail-

road, and then load it on a narrow-gauge train and transfer it before it really started to market. It makes but little difference whether alfalfa hay is worth ten dollars a ton in Illinois, or fifty dollars a ton, to those people simply because of the fact that the expense of delivering that hay to you would be too great. The only hope that they have is the establishment of herds or the purchase of stock cattle to consume the hay that is produced in that community. I use that as an extreme example of one thing which live stock, and especially beef cattle, are supposed to do on the farms of the country.

Handling of beef cattle gives employment to men in a rather uniform way throughout the year. There is no other system of farming, whether you follow it in Illinois or we follow it in Kansas, or in any other section of the United States, where the same number of men can be consistently employed on a farm throughout the year as there is on a farm which is devoted largely to the growing of crops in the summer and to the feeding of the same crops throughout the winter. A good live stock farmer who is feeding, developing and growing beef cattle one year after another, who is keeping about the same number of men employed in the summer growing crops as he does in the winter in the feeding and handling of his live stock, invariably he has the highest class, the most dependable and the most valuable farm help in the community.

BETTER CROPS AND BETTER MARKETS.

Handling of live stock in that way serves a double purpose,—it gives us a market not only for the crops we have grown, but enables us to employ more efficient men in the growing and development of those crops, thus not only reducing cost of production but increasing gross returns.

There is a third function which cattle perform on a good many farms of the country. In this immediate vicinity the land may be so rich and so productive that you can disregard everything else and simply grow crops continuously one year after another without any particular attention to the soil, but in the great majority of farming sections of the United States, one of the big functions which is performed by beef cattle on the farms is to consume the feeds that we have grown and to return to the soil a fertilizer in the form of manure, to work up in the form of bedding the straw, and the other things which we produce in connection with grain growing, and thus maintain or increase the fertility of the soil.

I can illustrate that very nicely on the little piece of land which was bought four years ago. The farm was about as uniform a soil from one end to the other as you can usually get. During the past season this land produced eighty-one bushels of corn per acre. The farm which is immediately adjoining, which four years ago was considered the same exactly, with the same soil, the same season, the same opportunity to grow crops, produced a little over forty bushels per acre. The first farm is handled as a livestock farm, all crops are fed, same feed purchased, straw and stalks converted into manure and applied to the land. The second farm is rented for grain production and everything marketed. That I will admit is another extreme example of doubling the production of corn on the land simply because of the fact that on one side of the fence live stock has been kept, manure put on the land, and the other side continued to haul off corn as it has been farmed for the last thirty years. Frequently the greatest source of profit in livestock feeding comes from additional yield per acre of future crops.

I never knew a man who rented a feed lot, bought his cattle, bought his feed and tried to make a living that way, who eventually did not go broke. We cannot divorce the feeding of live stock from the production of crops. I never have known a man who produced good beef cattle, owned pastures on which they grazed during the summer and grew the feed which they consumed during the winter, who did not prosper. I never knew a man to go broke following that system in the production of beef. The one system where you buy cattle, buy corn and hire labor is almost a

certain road to financial destruction, the other system where you grow cattle, grow corn, and if possible grow labor along with it, is a system which is bound to win.

Cattle perform another very important function on the farm. They furnish us a market for feeds which would otherwise have but little or no commercial value, and that is illustrated in this way: in the state of Kansas, where this year we have an abundance of feed, more feed than we have cattle to consume it in the wintering of our breeding cattle, there is a herd of forty-six breeding cows, all of which raised calves last year and which are being wintered this year; since those cattle were brought in off of the pastures in the middle of November, they have been maintained entirely on the residue of the crops which have been marketed, which have been grown as grain crops. Because of the scarcity of live stock in that immediate community, and the impossibility of selling stalk fields and straw, which have no commercial value, those cows have been wintered up until the present day, and will continue until the first of March, at a cost of \$156, a little less than four dollars a head for the winter. That compares very favorably with the cost of nearly twenty dollars a head for the same period at a time when feeds were not quite so abundant as they are at the present. I use that to illustrate that whenever you get into a community where live stock has been eliminated almost entirely from the system of farming it leaves no market whatever for such things as cannot be marketed in their original form. In other words, where there are no cattle there is no market for stalk fields, there is no market for straw, there is no market for damaged hay, if a long distance from the railroads, even the commercial crops suffer for lack of a market.

SAFE AND PROFITABLE INVESTMENT.

Cattle fulfill another very important place. If anyone is in such financial circumstances that they have a surplus of wealth, cattle furnish a very good place in which to invest a considerable amount of money and to return an interest on your investment. At present cattle paper, which is not as well received at it was a couple of years ago, is demanding approximately eight per cent throughout the entire United States. Nothing looks safer this year than good cattle paper. I do not know of any other way in which money can be invested with a return of eight percent on a safe business proposition. That is one function which beef cattle perform that we very frequently overlook.

As a man increases his land holdings, no matter how profitable the production of poultry, hogs or dairy products may be, he is unable to extend his business in proportion to his extension in land. A man can direct and operate a larger farm, a larger body of land, he can handle, operate and direct the investment of a larger amount of capital in beef cattle and in land than he can in any other combination that I know of with agriculture as its basis.

It is not the man who owns the largest herd of cattle, or the man who feeds the largest number of cattle, that is usually the most efficient cattle man. We find that as a general rule a comparatively small farmer who can look after his own herd, who can personally supervise the feeding of his cattle if he does not do it himself, is the man who usually is most successful in the development of a beef cattle industry in the community.

That is illustrated on the Kansas City market very nicely. During the past year I happen to be acquainted personally with five men and know their herds fairly well, who at one time or another during the year placed a new top on the Kansas City market; first in June, then in July, later in August, and finally twice in November, when the last of the five sold a carload of Shorthorn cattle for \$12.75 per hundred, which I believe was the highest price paid on the open markets in the United States for cattle during the year 1921, disregarding show cattle. In every instance the cattle which performed this market topping 'stunt', as we call it, were produced and fed on the farms from which they were shipped. There was never an expense

for a commission, for freight, for yardage, or a trip to a central market to buy them; there was nothing charged up against those cattle except the maintenance of their dams and the feeds that had been used in growing and preparing them for market. In the end one of the most important places where we can look for a more economical production in the future is in the elimination of expense before feeding starts.

Too frequently we expect some man in Arizona or New Mexico to breed a calf and to handle him until weaning time. He is then shipped to the Panhandle of Texas, which is considered a growing country rather than a fattening country, where he remains from calthood until he is ready to fatten on grass. When he is a two-year-old or three-year-old he is shipped to Kansas or Oklahoma when he goes on our long-grass pastures and there matures as a grass-fat steer, matures into such condition that the Corn Belt feeder will buy him for the purpose of finishing him for the Chicago market. He goes from the long-grass pastures into the feed lots and from there to the market. Frequently there will be three to four freight bills, one to two commission charges, and the shrink which accompanies the movement of an animal from one section of the country to another charged up against the fat steer before he goes to the market. There is not ten percent of all of the beef cattle marketed in all of the markets of the United States which go directly from the farms or the ranges on which they are produced to the market for slaughter. The other ninety percent have changed ownership and have changed location, frequently a very radical change both in ownership and location from one to three times before they finally go to market as finished or fattened animals.

The beef cattle industry has not been in such condition during the past year or two that it could afford or could stand three or four profits and leave any profit to the man who finally shipped that animal to market. That is one of the greatest problems which the cattle men of this section of the country, and the cattle men of the west have to confront,—the movement of our cattle from the place of origin to the final place where they are finished for market with a minimum expense.

HOGS ARE NECESSARY ADJUNCT.

Any man who expects to make a business of cattle feeding considers the hog in connection with it. We usually expect, when we are full-feeding steers, to get about two pounds of pork from a bushel of corn fed to the cattle. Occasionally we find men who attempt to feed cattle without hogs. Very frequently we find men who feed their cattle in such manner that the hogs can get but very little of the by-products from the feed lots. The most economical feed lot is one which will turn out the greatest amount of beef and pork combined from a given quantity of feed.

The main factor which enters into the economic raising of cattle, is to secure animals bred for the purpose of making beef, animals which will make a profitable growth and will finish readily. Taking all of our cattle that are shipped to Chicago, Kansas City, Omaha and Denver and the other central markets of the country, the average steer that is three years old weighs less than a thousand pounds when he reaches these central markets. This means that we have produced less than three hundred and fifty pounds of beef, if we disregard the birth weight of the calf, annually from the time the calf is born until he finally goes to market.

PROPER FEEDING ESSENTIAL.

A well bred calf properly fed, properly grown and then properly finished for market will reach a weight of a thousand pounds when he is fifteen months old. I am speaking now of commercial cattle. Occasionally in the production of show cattle we can secure a weight of a thousand to eleven hundred, or even as high as twelve hundred pounds when they are twelve months of age. When we can modify our methods of feeding and management in such manner as to eliminate from eighteen to twenty-four months from the life of a steer and still send him to market at the

same weight, it seems that this would be a most economical process for us to attempt.

The difficulty which we have had in the past in getting these weights has been two or three fold. In the first place the average cattle man has felt that if a calf weighed as much in the spring of the year as he did in the fall of the year when weaned that he was wintering fairly well. It would take him about a month or six weeks to recover after he was turned out on grass. The result is that he only had about three and a half to four months to make any further growth the second summer of his life. He is then wintered in such manner that he would not make any gain in weight the second winter, and he would require virtually all of the third summer to reach a condition desirable for slaughter as a grass-fat animal.

In the future we will be compelled to so manage and so handle our cattle that they cannot only make growth in the summer period, when nature gives them the most ideal conditions, but also that ideal conditions in winter may result in equally satisfying gains. As Professor Kildee said a few minutes ago, the dairy ration is corn, clover, alfalfa, silage and hay. The basis of a beef ration is the same. If we provide our cattle with an abundance of good roughage that is palatable, wholesome and nutritious, we would never expect them to lose anything during the winter, as they so frequently do. One of the problems which we have before us is to devise means and methods by which we can winter our cattle economically and yet in such a manner that they will make a normal rate of growth and improve in condition rather than go backward, thus eliminating loss.

PERMANENCY WINS.

There are times, such as we have gone through just recently, where there is a general readjustment in values, but I know of no method by which we can anticipate them, or any method by which we can avoid them. The man who goes into the cattle business must go into it as a permanent proposition. It is impossible for him to go in one year and out the next and attempt to strike a good market. If he consistently produces beef one year after another he will find in the end that there is no better market for his grass, there is no better market for his corn, there is no better market for his hay and the other feeds that he produces on his farm than by converting them into meat. He can do this and maintain the fertility of the soil; he can do it and maintain the yield of his crops, and if he is so situated that it is possible for him to place a breeding herd on his lands he can do it and at the same time build up the quality and the type, and the breeding and selling value of the cattle which he produces.

It is quite noticeable when we go to the markets of the country to buy feeding cattle that we have very great difficulty in securing cattle of the quality, type and breeding that we desire. Any man who has produced the sort of a calf that you would like to put into your feed lots and finish as a yearling, is one who has made a very splendid study of the production of beef, and has produced that sort of a calf simply because of the fact that he wants it himself. He hasn't produced him to sell as a feeder, but he has produced him to sell as a fat steer. The result of it is that the great bulk of the cattle that are produced in the pasture sections as distinguished from the range sections of the country are never offered to you as feeders. If you want that class of cattle you will have to produce them.

On the other hand there is an opportunity for a few of you to go to the range section of the country and buy your cattle direct. The range cattle man is looking for a definite, distinct outlet for the product of his herd, and he is looking for a means by which he can sell his cattle at a little bit higher price, by which he can get a little more profit out of them and yet deliver them to a man who expects to eventually feed him at a lower price than he is accustomed to pay. I think we are working at a system of that sort throughout the entire country. It is going to mean a great deal both to the

cattle feeder who is not in the position to produce his own cattle, and to the range man who is not in the position to finish the cattle of his own production.

LIVESTOCK COMMUNITIES RICHEST.

When you consider this business from this broad viewpoint, not from the standpoint of the individual feeder, we have three or four things to take into consideration which indicate what we may expect in the future. If we study the breeding, development and the handling of beef cattle we find that in those countries which have been in this business for the longest period of time—take the British Isles—land is much more productive than it was when it was originally brought under cultivation. If we study the situation in this country we find that beef cattle are found in larger proportions in those states which are noted for their agricultural wealth than they are in those states which are noted for their inability to produce agricultural crops profitably. We may use the pure bred cattle association records as a method of illustrating this point. There are more beef cattle registered from the state of Iowa and from the state of Illinois, the two states which are generally recognized as having the richest land and the most valuable land of any states in the Union, than there are from any other two states in the United States. We find that there are more cattle registered from these two states in proportion to their area than there are in proportion to the areas of any other states in the Union. This indicates that as the country develops and the land increases in value the habit of producing pure bred livestock, which reflects a successful production of beef in the past, increases.

I was interested in a study in the state of Missouri. Nodaway county is the richest county which we have in the state of Missouri. It is the only county, I believe, in that state in which land ever sold for agricultural purposes alone for over three hundred dollars per acre. That may seem like a low price to people in Illinois, but to Missouri it looks rather excessive. Nodaway county produces more pure bred beef cattle in proportion to its area than any other county in Missouri. It has the richest soil of the state.

In the state of Kansas we find exactly the same thing true. Brown county is one of the counties in Kansas in which land sold for agricultural purposes for three hundred dollars an acre, or above. We find that in Brown county they feed more cattle in proportion to the area than in any other county in the state. We find that Brown county registers more beef cattle than any other county of like area in the state of Kansas.

The point I am trying to bring out here is that through a series of years we find that those men who are most successful in the handling of their land, those communities that are most successful in the development of their land, those communities in which land registered its highest value for agricultural purposes are communities that have been devoted consistently one year after another to the production of livestock and to the feeding of them out on the farm. By producing our own cattle, producing our feed, finishing our cattle for market thus we furnish a market for our crops, we furnish a market for our labor, we furnish fertility for our soil, which we cannot secure in any other manner. Those are problems which each man has to solve for himself. But we cannot expect to do this by handling the ordinary class of cattle. You will find that the successful man who produces his own livestock is the man that uses the best bulls that are used in that community. There may be an occasional man who has the ability to go to a central market and buy cattle cheap, ship them home, keep them for a comparatively short period; he may ship them back to market and make a profit on them, but the ordinary man never made a profit in the production of that kind of cattle.

In the end the thing we want to do is to get on a safe and sound basis where we will produce cattle that will mature early, that will make rapid gains and that will sell to advantage when finished.

WHAT THE MARKET DEMANDS.

We have gone through a slight change in the class of cattle that the market demands. A few years ago the most marketable cattle we had were cattle that weighed from fifteen to sixteen hundred pounds. Today the most popular cattle we have on the market, properly finished, are cattle that weigh about twelve hundred pounds. During the past year, if we could get them finished at that weight, the most popular cattle we had going on the markets of the country were those that weighed about eight hundred pounds. I think you will find that in the future our cattle business will go through the same process of evolution that the hog and sheep business went through. Originally in this section of the country the most successful hog man was the man who could send to Chicago the heaviest hogs that were produced in the county. The most successful sheep man was the man that would handle the heaviest withers. Today the most successful hog man you have is a man who is able to finish his hogs at weights of 175 to 200 pounds; your most successful sheep man is the man who can produce his lambs and get them on the market in prime condition weighing under 80 pounds.

Our beef cattle are going through the same process. It is rare that we see a four or five year old steer. It is exceptional to see a three year old steer in our feed lots, and it is getting to be a common custom to feed yearlings. To those men who are backing the feeding of yearlings this year for the first time I will say that in the end the most successful yearling feeder is the man who makes his cattle the fattest. A yearling may be the most disappointing individual ever shipped to market if shipped from thirty to forty days before he is really ripe. They do not ship like the older steers. The great bulk of men who have tried to feed yearlings, tried to finish them for market, have become discouraged. They are men who ship them from thirty to sixty days before they are ripe. There is more money lost in feeding yearlings and shipping them before they are ready than in any other way.

FACTORS WHICH SPELL SUCCESS.

I have talked in a rather rambling manner. I think I can sum it up, however, in a comparatively few words, and will try to do so. Success, which means practicing of the greatest economy, is dependent:

First, upon the ability to produce feeds which beef cattle can consume. If you can produce those feeds profitably you can feed them.

Second, upon the ability to produce cattle of the type and the quality which the market will demand.

Third, upon your ability of putting this feed into the cattle in such a manner that they will make the greatest use of it, supplementing it, if necessary, with feeds which will increase the efficiency of those feeds which you have produced.

Fourth, if you are not in a position to produce the cattle, to be able to go to the market and buy the class of cattle which have proven the most economical for you to handle in relation to the feeds which you have produced.

In this way you will get a maximum production from your soil, you will get a maximum production from your cattle, and through a series of years you will find that cattle will return to you as great a value for the feeds you have produced as you can secure in any other manner. That in the end is the purpose of the cattle—to furnish a market for what is grown on the farm and at the same time maintain the fertility of the soil.

The most important function which cattle perform in any community is in developing a permanent system of farming. A man cannot go out, buy a farm and put on cattle and get through with it and consider it a year's work. It is the work of a lifetime. It is the work of maybe the lives of two or three generations of men to produce the kind of cattle which are most desirable. You will find whenever you go into a community where the breeding and production of livestock has been the major industry through a series of years there the people are permanently attached to the land. You will find fathers and sons follow each other in the cattle business. By

this method they build up in the community a farmer citizenship which is the most desirable. That in the end I think is the most important feature of the production of livestock in Illinois, or in Missouri, or Kansas, or Iowa, or any other state. It builds up a better class of citizens than you can build up in any other manner. I thank you.

Q. Mr. Chairman, I should like to ask a question. In these days when oil meal is so high, is there any substitute?

Prof. COCHEL: Well, I am feeding today 121 cattle. I am feeding them a little oil meal, but not nearly as much as when it was comparatively cheaper. I was very fortunate, however, to get it before the raise in price. It cost me, delivered on the farm, thirty-six dollars a ton. I am feeding instead of two pounds a day, which I would like to feed, less than a pound a day. Oil meal has a value as an appetizer and causes cattle to consume a little bit more grain and mixed roughage. It is for this reason I like to feed a little to them almost regardless of price.

THE NEAR EASTERN RELIEF.

PRESIDENT MANN: There is a matter I should like to speak of this morning, if you will pardon me. There is a little country over in the old world, a little farming country, not very good land, not very good farms, mostly a grazing country, a country that has been devoted to that form of agriculture as far back as history goes. This little country lies in between Russia, Persia and Turkey. It is the first little nation to establish Christianity as a national church. They carried the flag of Christianity all through the Dark Ages, and still carry it. They belong to the Aryan race, to which we belong, but are considerably mixed in their racial characters. It is a good example of what people have done in the past when hunger drove them to war. Whenever Persia, Turkey or Russia became hungry they ran into this little agricultural country, took away the food, killed off the men, carried away the women many times, notwithstanding that there had been many agreements to regard the rights of that little country by the nations around it. There had been times when even England joined in that agreement, but whenever the people around this country became hungry they resorted to violence on this little country. Even since the great war Turkey ran in there, killed the men, carried away the women and left from a hundred to a hundred and ten thousand children. Now we are asked in this country that we devote some of the surplus food we have to support these children for a while. We are doing that under the name of the Near Eastern Relief.

The Near Eastern Relief was authorized by Congress, the only institution of the kind, except the Red Cross, which had been authorized by Congress. The administration expenses are borne from a separate fund, and in asking the farmers of Illinois and other people to contribute to the support of these children it means that a dollar given or a bushel of corn given reaches those children. The expenses of transportation, the expenses of administration are not taken out of any contribution that we make.

Now they have nearly a car of corn raised in Monmouth. They need a little more corn to help to finish that car from the farmers and people around Monmouth. They are raising a car in my town this week. I don't know whether I will get home to help them tomorrow or not. I hope they will have it done.

This is a case where the farmer can eat his pie and have it, too. They say we can't eat our pie and have it, too, but our speaker last night told you how easy it was; that, if we give away a bushel of corn we increase the rest of the corn which remains far beyond the value of that one bushel. That is a case where we can eat our pie and have it, too. Let us eat some.

REPORT OF COMMITTEE ON RESOLUTIONS.

PRESIDENT MANN: We are now ready for the report of the Committee on Resolutions. You all have a vote. Everybody here belongs to the Farmers' Institute and has a vote. If there is any resolution that you don't

like you may vote against it; if you like it, vote for it. Mr. Abbott, Chairman of the Committee on Resolutions.

Mr. ABBOTT: Mr. CHAIRMAN AND GENTLEMEN: If a Rip Van Winkle had been asleep for twenty years and woke up and was presented with the resolutions that have come before your committee he would be struck with the idea, if he were of a discriminating mind, that we just passed through a great crisis in the matter of taxation and rates, and that reduction of expenses was uppermost in our minds. Practically all the resolutions that have come to us had a bearing on those subjects. Mr. Vrooman told us last night that any thought, any idea expressed here would have its influence in the remotest places of the earth, and with that in mind we have a few resolutions.

I will explain briefly some of these clauses that we have left out. You know when we pay our taxes we pay them in spring, and it takes a whole year for those taxes to be expended. Somebody has that money and somebody may draw the interest on it, or it is lying in the bank. It has been suggested, and I think it is a good plan, that we have the privilege of paying our taxes twice a year, once in the spring and once in the fall.

TAXATION.

Resolved, That we favor a change in the Illinois Tax Laws, providing for payment of taxes in equal semi-annual installments.

Resolved, That we oppose a Sales Tax Law in every form for any purpose.

Mr. HURDMAN: I would like to ask the gentleman what objection there is to that law.

Mr. ABBOTT: The farmer would have to pay a tax on everything he sells and he would have to pay a tax on everything he buys from the merchant or manufacturer. They would have added the tax to the article and the farmer would pay that, too. The farmer cannot add it to what he has to sell, but he would pay it coming and going, both ways.

Mr. HURDMAN: If I understand it, the basic idea of the Sales Tax Law is that the producer in whatsoever line does not pay the initial tax. The man that raises a thousand bushels of corn and sells it will not pay a tax on that corn; the man that produces a thousand barrels of oil will not pay the tax on that oil, or the man that produces a thousand tons of coal does not pay the tax on the coal.

Mr. ABBOTT: Aren't they dodging the tax, then, if they do not pay it?

Mr. HURDMAN: The producer in whatsoever line is not taxed the initial tax.

Mr. ABBOTT: That may be the theory, but how can a farmer sell anything but what they take the tax out in the reduction of the price at which he sells? He can't fix the price of the commodity.

Mr. HURDMAN: Does that not depend entirely upon whether prices are fixed, as they are, by the oil seller or the manufacturer? Now, if oil is selling for 20 cents a gallon and the tax is added it sells for 21 cents. If corn sells at 50 cents a bushel and the tax is added the man who sells it gets 49 cents.

Mr. ABBOTT: That is the way it goes, as the committee found it. The farmer would be the man that would bear the burden of the tax.

GOVERNMENT ECONOMY.

WHEREAS, The expense of local, county, state, and national governments is increasing at an alarming rate—much faster than the ability of the people to pay taxes—therefore, be it

Resolved, That we demand that all public officers exercise the utmost diligence in reducing public expense; and be it further

Resolved, That we condemn the creation of new Boards and Commissions, pensioning and paternalism with an army of expensive deputies, agents, investigators, inspectors, and non-essential official parasites.

FREIGHT RATES.

WHEREAS, It is unfair to expect farmers to continue to pay the present excessive freight rates with farm products at pre-war levels; therefore, be it

Resolved, That we demand that railroad freight rates be reduced at once to a level corresponding to the price of farm products.

LIVE STOCK MARKETING.

Resolved, That we heartily endorse the plan of live stock marketing recommended by the Committee of Fifteen, including the encouragement of local live stock shipping associations, the establishment of farmer-owned cooperative live stock commission companies, and such method of stabilizing market receipts and prices as may be found practical.

COMMUNITY HIGH SCHOOLS.

Mr. ABBOTT: The Community High School Law, as you know, is a law that permits cities and towns to vote a country rural district into a high school district. It has been in operation for some two or three years, and I want to briefly show some of you people who have not had any experience with it and are not familiar with it, the way the law works in some instances.

This is not the Township High School Law; this is the Community High School Law. I will give you just a few instances of some real things that happened in the county in which I live, in Whiteside County. Here is a little town in the center of the township; they thought they would form a community high school and take in that township. They are quite a ways from the railroad, and it was really a pretty good thing with them. Over here in another county was a town of considerable size and they thought they would operate under this law. They heard these people were going to have a community high school, and they said the folks back there dated their petition one day back so they could have an election one day before these other people could. What did they do? They came down here within eighty rods of that town and they put it into this high school district up here eight miles away. These people had the election the next day and they got this little territory right here, and these folks had to go eight miles up to that other town in another county. That is the way it worked there.

Q. Mr. Speaker, that was because the other township had a large city in it?

Mr. ABBOTT: Yes, sir. They had the larger city and they had the election first, anyway.

Q. The district outside of it did not have votes enough.

Mr. ABBOTT: No, the people could not outvote that proposition. It killed that little school practically. Here is Rock River (illustrating on blackboard), here is Sterling, here is Rock Falls. They are in the same congressional district. Sterling has a good high school, but Sterling and Rock Falls do not get along very well together, so Rock Falls sent a man down to the legislature and he got a bill through the legislature which says that where a township is separated by a river the township high school law does not apply. These people did not want to send their children across there to school, a half mile, to one of the best high schools in the State, so they came down here, fourteen miles away, and took these people here up into their school. They had another school here within two miles of them. That was this community high school law.

Here is another case. Here was the little town of Erie (illustrating on blackboard), here is the county line, here is Hillsdale. Now, both of those folks thought they would have the community high school. Erie says: "We are going to take Hillsdale into our school." Hillsdale got busy and they had the election next day, the day before the Erie folks did. They came up within a mile of Erie and took all of this into their school district. Then Erie had to do something, you know, and they looked away over here

to the northwest sixteen miles and got people into their school, when they were nearer three other high schools better than theirs. A gentleman from this town told me last Saturday night that it cost that town a thousand dollars for every child that went to this school, and there is no building fund there either. Now they are outrageous, that is all; they are unfair.

Here was the town of Linden, that is on Rock River, too; up here is the town of Mount Pleasant; here is Morrison, the county seat, with a good school. These people formed a community high school district. They have about sixteen schools. The first year it cost five hundred dollars for each scholar. There is a hard road to Morrison. Here is a man living here, nearer Morrison than he is to Linden, right on the township line. He pays \$115 tax in this district. He sends his boy to Morrison, where they have a good school. He pays \$95 tuition to go to Morrison. Here is his neighbor, right across the road, in non-high school territory, pays \$15.

Well, I could go on enumerating those conditions. Now, we want to be fair and reasonable. We know that the city high schools are crowded, they want relief in some way, and we met with farmers, with the business people of Morrison last Saturday night and talked the matter over. They were getting ready to spring a consolidated school district around the country there, and I guess they would have been outvoted. We told them that we wanted to pay for the education of our children; we are willing to do that, wanted to do it, and we wondered how it could be done. They said that our children that came to their school, paying the non-high school tax, don't pay enough. That is, we pay for the maintaining of the school, for the teaching, but they have got to have a building and they want relief in some way for the building, interest, insurance, and everything of that kind. We suggested to them an amendment of this non-high school tax, in which the country children, instead of paying one rate, as they do now, would pay a rate and a half. That would provide, they said, ample means for their buildings. As it is under the community high school law in our county the farmers pay from 60 to 80 per cent of the tax, and they send from 20 to 40 per cent of the children.

We have a resolution along that line:

WHEREAS, The farmers of Illinois are willing to pay the entire expenses providing country children with the best possible education; and,

WHEREAS, Because of the fact that the farmers' property investment in proportion to his income is much heavier than the average city resident, the practical effect of the community high school law is to compel farmers not only to pay for the education of their own children, but to contribute a substantial sum toward the education of town and city children as well; therefore, be it

Resolved, That we demand the repeal of the law referred to and the substitution of tuition laws requiring non-high school districts to pay a rate of tuition based on the per capita operating cost of maintaining these schools, including proper buildings and overhead charges.

COMMUNITY PARK LAWS.

Mr. ABBOTT: Here is something new which has come down the line hitting the farmer, called the Community Park Law. A city wishes to establish a park, and finding they do not have quite enough money, they go out and take in a rural community, take in a township or two or three townships; take in enough territory so as to reduce taxation in the city quite materially. A farmer doesn't have as much necessity for a park as the people in the city have; possibly he has woodlands of his own, at least it isn't as necessary for him to go out in the park and exercise.

WHEREAS, The Community Park Law makes it possible for the cities and villages to vote farm land into park districts without the consent of the owners, taxing it for the purpose and maintenance of city parks, which are of little or no value to the farmers; and,

WHEREAS, We regard such a law unfair and wrong in principle; therefore, be it

Resolved, That we demand that this law be repealed at the next session of the legislature.

FOREIGN CREDITS.

Resolved, That the State Farmers' Institute urge upon Congress the passage without delay of a law that will enable us to sell our surplus crops abroad on credit.

Mr. ABBOTT: That is along the line of Mr. Vrooman's talk last night.

Resolved, That we express our hearty thanks and appreciation of the generous and courteous welcome and treatment accorded the Institute by the Chamber of Commerce, the Warren County Farm Bureau, the Y. M. C. A., the Warren County Farmers' Institute, the local newspapers, Monmouth College for their splendid music, the church and the people and business men of Monmouth and vicinity for the hearty cooperation and active assistance in making the twenty-seventh annual meeting such a splendid success.

Mr. ABBOTT: That completes the report of the Committee on Resolutions. It is signed by A. N. Abbott, Frank S. Haynes, George A. Switzer, E. W. Wilson, and C. V. Gregory.

Mr. President, I move the adoption of this report and the resolutions as read.

PRESIDENT MANN: You have heard the report of the Committee on Resolutions. Are there any question?

PRESIDENT MANN: The motion is made and seconded that the report of the Committee on Resolutions be adopted. All in favor of the motion indicate by saying "aye." Opposed, "no." The motion is carried and the resolutions are unanimously adopted.

FRIDAY AFTERNOON SESSION.

February 24, 1922, 1:30 o'Clock P. M.

Solo.....Mrs. Lois Fowler Getty

PRESIDENT MANN: How are we going to spend our money when we don't have it? How are we going to spend it when we have plenty? Miss Wardall is going to discuss "The Use of the Income." [Applause.]

THE USE OF THE INCOME.

(Miss Ruth A. Wardall.)

It would be very nice if I could tell you how to get more money to spend, but that is not my business. I am sure that you have some, or you would not be here.

It is rather interesting, when we stop to think about it, that so much of our time and so much of our effort goes into the earning of our income. We are chiefly concerned with the getting of it, and as I often say, I really think we should give our incomes the respect of stopping to think a little about how we are going to use them.

The use of the income! What are we going to do with it? That is the thing that does not claim enough of our attention. Our incomes, I think, are worthy of some thought. They will certainly accomplish more if we do think about them, than if we do not think about them.

As one starts a discussion of the income people will begin to talk about spending. That seems to be the thought that is in their minds. That is one

thing to do with money, but it is also a very appropriate thing to save money, and to give money. We can at least spend and save and give from the income that we have, if we are to use it. Usually in speaking of the income, we have in mind money—a money income.

Let us consider two families with the same money income—or approximately the same—living in about the same place, and having the same number of people so that they have about the same conditions to meet. We find one family that is very comfortable, they seem to do the things they want to do, have the things they want, and on the whole they give the effect of being very prosperous. The other family does not give that impression at all. They seem to be in more or less difficulty. The income is the same. There must be some difference in the way they use it.

I think sometimes it helps us a little bit on the income if we forget ourselves and look at our neighbors. You know we can tell so much more about our neighbors and what they ought to do than we can about ourselves, so if you will look at and talk about Mr. Smith or Mr. Jones and their families it is just a little bit easier.

One of them does very well with his income and one does very poorly. The fact that one is in better shape than the other when the income is the same, as I say, will have to lead us to conclude that one of them uses his income better than the other one uses it. That ought to lead us, then, to think a little bit about ourselves, and about the possibility of our being able to do better.

WHAT SHALL WE DO WITH MONEY?

How should we use our income? Well, I believe that your income should mean to you, and my income should mean to me, the gaining of the things that you want and that I want. The quarrel that I have, if I have any quarrel, is with those of us who do not know what we are spending and cannot really say whether or not we are getting what we want. The money comes and the money goes, and we have the feeling in some way that we lack some of the things that we want, and we are not quite satisfied, and we cannot tell how we have spent our money. We have no right to feel sorry for ourselves—none at all. We ought to know what we are doing. We ought to know what we want, and we ought to know whether or not we are using our incomes to gain the thing that we really want. Of course, it is to be hoped that we are wanting something that is worth while, but in the last analysis your income ought to get for you, as far as possible, the thing that you want, and my income ought to bring to me the thing that I want if I am using it well.

We should not all spend alike because we haven't the same conditions to meet. We should not all save alike; in fact, desirable as saving may be, there are families and there are conditions where for a period of time it is perfectly impossible to save anything.

Sometimes it is necessary to pass through a year without saving anything. It is a very unfortunate thing if we have to pass through many years without saving something; it is unfortunate if we haven't the habit of saving; if we haven't the habit of distributing our expenses in such a way and our expenditures in such a way that we may have money to spend all the while—but it is fairly conceivable that there are times when it is not our business to save, it is our business to spend for we haven't enough money to do anything else under the conditions in which we are living. In general, one should save, but it cannot be all the while.

What is, then, a good use of our income? People frequently talk about necessities and there are certain things that we must have. For instance, if we are going to live at all we must have a certain amount of food, a certain amount of clothing, and we must have a roof over our heads as a shelter.

Now, if we have an income which will give the food which is necessary to protect us, and a roof over our heads, we can then begin to decide what we want. In other words, there is a little choice left us after the bare necessities are secured. We have come beyond the primary needs.

Of course, the majority of the people to whom I am talking this afternoon are not limited to the bare necessities and the minimum of living. That is perfectly certain. You must have had the privilege of deciding whether or not you would spend your money to come up to the farmers' institute. If you did not have the money, I dare say you would not be here. You people to whom I am talking this afternoon are beyond that lower level of having just the mere necessities of life and you are all exercising some choice with regard to the way you spend your income. Some people after providing for the necessary food, shelter and clothing will put a little surplus, if they have it, into more food, they want more food. Then there are other people to whom food is not so important and if they have any surplus it goes for clothing. There are other people who would rather have amusement, so they will spend the extra money for amusement.

Now, what do we want? Once the bare necessities as we outlined them are filled, what do we want? More food, more clothing, more shelter? Do we want a lot of amusement? Do we want education? Do we want travel? Do we want books? What do we want? We must have some of these things. We cannot have all of them unless our income is large. We cannot have a great deal of all of them unless our income is very large. What do we want? This is where I think we have made a very great mistake. We have not stopped to think what the possibilities were and what we really wanted. We have just bought this thing and that thing, without mapping out any sort of program.

That is not really a very intelligent way to proceed. We don't feel very comfortable about it if we just stop to think. It is what I call a lack of respectful attention to our income. We really haven't given it the thought that we should.

OUR ATTITUDE TOWARD INCOME.

There are a great many attitudes toward the income, and it is important that we have a good attitude. There are a good many people who have what I call a more or less slipshod attitude; people who say: "Oh, well, I pay my bills." I will admit it is very good to pay one's bills; one is much more comfortable if the bills are paid, but that is not enough. One may make very unwise expenditures of money, and one may do very foolish things, and yet be able to pay the bills.

Then there is another group of people that are both hopeless and helpless. I am going to ask you to pardon me if I give you a personal experience. It was during the war time, when the war savings organization was very active. I happened to be at a meeting in one of our large cities, and the speaker of the day, knowing what they had asked me to talk about, said: "Miss Wardall is here. She is going to talk to you about planning the use of your income and about the budget. Now, it can't be done. I tried it, and it can't be done, and you probably know it." The rest of them shook their heads in assent, but I said: "Well, the only comfort to be gotten out of this situation is that saying a thing is so does not make it so." Perhaps he could not keep track of his finances, but I knew people who could, and I thought I had just as good reason to believe the people who could as the people who say they cannot.

There are those people who know ahead of time that they cannot do it. Perhaps they are the sort of people who make New Year's resolutions, knowing they will break them. It is difficult to do much with people like that.

There is another type of person who says: "I am just as economical as I can be." Well, you know that person is not, but he is a very self-righteous person—"just as economical as he can be." He is not at all, or she is not at all.

Sometimes people have the feeling that because they don't have all the money they want and don't get everything they want, and because they deny themselves, that they are very economical. They may be the most extravagant people on earth, and that sort of complacent, self-righteous attitude is a very poor one. If any of us belong in that category, let's get out of it.

Then there is the person who says: "I have no time to look after those things. I am too busy. I cannot stop to look after accounts and budgets."

Recently I was talking with a very dear little woman I know, and she said: "I don't like the way things are going in our house. My husband and I are rather disturbed. We are able to pay our bills, but we are not getting where we should with our income." I said to her: "Have you kept track of the money that you spend?" "Oh, yes," she said, "I have." I found that she had not learned to classify her figures although she had taken pains to keep a record of everything. I thought I would try her out, so I said: "Well, with your three children," (the oldest of whom was four) I should think you would be a pretty busy woman to do this, She said: "I am too busy not to do it." A pretty good answer for some of us, if we are too busy! She had three children, had no help with the housework, did her sewing, and yet she was too busy not to look after the household expenses. This little woman has always given me great comfort.

We can usually do the things we want to do. When we say we are too busy, it is often because we want to excuse ourselves from doing something.

Then, of course, there are a great many people who simply like to be extravagant. They like to pay big prices for things.

I overheard a very interesting conversation between three or four young men not very long ago. They were sitting just opposite me on the train, and it appeared from the conversation that they had been exchanging neckties, and each one had gotten the tie that he preferred out of the group. Finally one of the boys asked another: "Say, what did you pay for this necktie?" When found that the boy had paid less for the necktie than he had paid for his, he did not like it and wanted to trade back. That is a good illustration. It was nothing in the world but the cost. The tie was very nice until he knew how much it cost, or that it had cost less money than his own, then he did not like it very well.

You know, we are all very much alike. Let's admit it, and let's try to overcome that fault in ourselves, because we do have it.

There are the people who think that they are unfortunate because they haven't the means to keep up with the neighbors. I suppose we are all influenced by that to a greater extent than we appreciate, perhaps, but that is a very unfortunate attitude toward the income.

Now, as a matter of fact, what should be our attitude? Where should we stand on this matter of the income? One safe and sensible thing is to realize that incomes are different, therefore our spending our saving and our giving should be different.

To the best of our ability, our incomes should express our best judgment as to the thing that is worth while, the thing that will mean the most to us.

ACCOUNTS ARE NECESSARY.

Now, I am going to say something that I always hesitate to say when I am talking to people, because there are so many people who don't want to hear me say it. You will have to keep accounts. There is no other way. Could a business ever run without accounts? Can a household run without accounts? Well, not run well. The business of the household is not being taken care of if we haven't some sort of an account. It does not follow that we need an elaborate system of bookkeeping, but we must have something in black and white. There must be some accounts.

I know people who keep accounts, and who have kept accounts, and who have balanced their accounts to a penny. These people are very painstaking and put down everything, and they have pages upon pages of figures over a number of years, yet these accounts are not worth a snap of the finger because they have never been classified. The expenditures have never been grouped and so the account does not mean a thing. Unless we can group together like expenditures so that we can get some idea of what we have been spending and what the relation of that is to the income as a whole, we have no means of knowing whether we approve of what we have done or not.

We must classify our accounts. I am quite sure, from a good many of the things that I have been hearing and seeing fairly recently, that there are many of the farmers in Illinois that are doing some very careful cost accounting in their farming business. In our household business we need a general accounting system which is not so detailed as this farm cost accounting that you have been doing, although it would be well worth while at times if we could have that in our household.

A plan for the spending of money is a budget and we need that for our household. We need a budget for the use of our families if we are to make the most rational use of our income. The most helpful thing in planning and making the budget is our own set of figures giving information as to what we have been doing with money. We can spend the same amount of money, or more, or less, as our judgment will dictate and as our wish directs us. Every once in a while someone will say: "We don't have figures; we haven't kept accounts." Well, possibly not, but even with people who have not kept accounts the stubs of the check book will tell a good deal and you will find when you really get at it that your memory will help you a good deal, and you can get a fair picture of what you have done with your money in 1921 if you really want it—enough to give you a pretty good idea of what you think you would like to do in 1922.

Very frequently we find in the articles in the magazines and papers suggestions for the spending of the income, and we find a certain per cent assigned to food, a certain per cent to clothing, a certain per cent to shelter, and so on. These estimates have some value, but not a very great deal, because twenty-five per cent of a two thousand dollar income is rather a different thing from twenty-five per cent of a five thousand dollar income, and while it may take twenty-five per cent of a two thousand dollar income to feed a family, it would not take twenty-five per cent of a five thousand dollar income to do the same thing. The percentages do not amount to very much unless we know the family, know the income, and know all of the conditions. Therefore let's not spend too much time looking around for figures of averages of what other people have done. The only thing we really need to look at is what we ourselves have done; what we are doing, and arrive at an idea of what we want to do.

In order to bring our expenditures into a condition where we can classify them and analyze them, we must, of course, have some sort of a system of grouping in our records. In business suitable headings for the various departments of the business are adopted. So in the household appropriate grouping of expenses should make it possible to analyze and interpret our expenditures. Six general groups are suggested, and subdivisions of these groups will aid in the keeping and interpretation of the records. I, food; II, clothing; III, shelter; IV, operating expenses; V, general expenses; VI, savings and investments.

If we will classify our expenditures for our family and for our household under some such group of headings, we will really have a basis for intelligently tackling the problem of the use of our income.

The actual division of the income, and the means of carrying it out, we haven't the time to discuss this afternoon, but I want to urge the necessity for having a plan or budget.

MAKING THE BUDGET.

Who will make the budget? One man said: "That is a fine thing. I am going to go home and tell my wife to make a budget." You know the wife could not make the budget alone, neither could he make it alone. The family should be on the job while the budget is being made.

I know husbands, for instance, whose wives know very little about their business. I know one very beautiful woman who said to me one time: "Well, I don't know what we should spend. I have no idea what my husband's income is. I don't know whether I am extravagant or whether I am not. How can I know, when I know nothing of my husband's business?"

There is more than one woman who is in just that situation. No man has a right to blame the wife or child for extravagance when that wife or child has no notion of his income. That is a perfectly self-evident fact. How in the world could you manage a business if you didn't know how much money there was to use.

I feel very keenly that it is necessary for the wife to be informed in regard to the income, for it is her business to spend most of the money that is spent in the household. She must buy the materials, the food, and most of the things that are used in the household.

If she does not know what amount of money is available, how in the world can we expect her to be intelligent? That does not need any argument.

I want to make the same plea for the children. I am often interested, in talking to a group of people, in saying: "How many give allowances to your children?" You will see, several hands up. Or if I am talking with an individual: "Oh, yes, I give my little boy or girl an allowance." "Well, how much, and what does this boy or girl do with it?" "Oh, he buys lead pencils, chewing gum, candy, marbles and goes to the movies." Now that is what most people who give money to their children expect them to do. The only money the children have is the money with which they are expected to do foolish things.

If your boy or girl is to learn to spend money, he must be made to buy things that are necessary. There is no reason why the young boy or girl should not buy their shoes. There are few things that interest children as much as shoes. Even a very young child will say: "See my new shoes?" They seem to have a tremendous pride in their new shoes. They had much better be taught to spend money for a useful article like shoes than to spend it for chewing gum and candies. It does not make very much difference how much the allowance is, but it should be a definite sum of money to cover a definite set of expenses, for which the child must be responsible. For the sake of the interest and co-operation of the children, I do beg that they be taken into the family confidence with regard to money and the use of money.

I have been talking about money all the while in connection with this family income. Now I want to just call our attention to the fact that there is a money income, but that is not the sum total of the family income, because the money usually represents the return on the services of the father in his business. If the mother is putting in all of her time, she is giving a great deal of service. Very frequently the children are giving a great deal of service, too, so in the total income we must include all these things. For the purpose of analysis we have been discussing money, but that does not begin to make the whole of the income, by any manner of means.

In connection with children, there is one other thing that it seems to me we may well think about. Much is being said at the present time about inducements to children for saying "Good morning," or "Thank you," or for brushing their teeth, and so on. They are given a penny or nickel for this. I don't know how you feel, but I have very strong feelings on the subject—that money is no fit reward for doing one's duty. I believe that a child should not be paid for doing right, or paid for doing what he ought to do. [Applause.]

But hard on the heels of that, I do want to say that the child should have a straightforward, out and out money allowance, and be made to feel that he is a part of the family, that he shares in this income, and that he has certain responsibilities, and that he will have the opportunity of learning to assume these as fast as his years will permit. That I really would like to urge very earnestly.

When ready to make your budget sit down some evening with your wife around the table, and if there are older children, call them in. It will certainly take two of you to work out this thing of how much you are spending for clothing, food, etc., and how much you think you will want to spend in the future.

The lawyer, the physician and the farmer are very apt to say: "Well, I don't know what my income is going to be." The dentist probably will

say he doesn't know what his income is going to be. He doesn't know how many people are going to pay their bills; neither does the doctor, and no business man knows exactly what his income is going to be, although he knows more about it now than he did in former years, because he is required to pay an income tax. There are a good many people now who know more about their incomes than they knew before. I think you will agree with me there—so we have a little more information than we would have had a few decades ago. Any lawyer, any business man, any farmer knows that for a period of years there is a level below which his income does not go. This lower level, then, is the sum of money to use in making a plan, or a budget. If the farmer has a good year, and he sells his corn more profitably, or if the sick people pay the physician their bills, these men may have a "plus" balance. But the plus balance isn't the thing that disturbs people—it is the minus balance that disturbs them. Because of the uncertainty of the income we cannot excuse ourselves in the matter of making a budget. We will take this minimum sum and we will block out the proportion it seems to us we want to spend for food, for clothing, for shelter, and so on. We will put it down in black and white and then endeavor to work according to plan.

Another thing—don't feel that if you do make a plan and later change it, that it was not good. That does not follow at all. A plan is not an iron-clad thing. It would be a very poor thing if we could not change it. Don't feel it was useless to make it because you had to change it. It is only because we have something down before us in black and white that we appreciate the fact that a change is necessary, and therefore we decide to do the thing we want to do. It gives an opportunity for deciding what we most want.

Another thing that frequently bothers people when they attempt to keep accounts or work on a budget, is balancing the accounts. We all hear about the men down at the bank who stay there late at night to locate a penny. Fortunately, it doesn't make a bit of difference whether your household accounts balance or not. Of course, you would not want a tremendous difference in them, but suppose they don't balance. You know where the income has gone just the same. If you are a few dollars off in your balance, it does not really affect the value of your budget or your accounts.

Another thing sometimes bothers people. They say: "I forget. I tried to set down the things I spent today, and I cannot remember. I am lacking fifty-nine cents and I cannot remember what I got." You know a very comforting thing to have in your budget is a column with the heading, "Unaccounted," and when you forget an item put the sum in that column and go serenely on your way. That was so comforting to me that I just pass it on to you. And don't feel that because you have a few dollars at the end of the month in your "Unaccounted" column that the accounts are a failure, for they are not. You will have the big plan. I have discovered that while it is difficult to start people to keeping a budget, it is almost impossible to stop them. The comforting thing is that once having done it you cannot stop it because you find it so well worth while. So if you are really interested in getting the thing you want out of your income, I should like to very earnestly commend to you a plan for the use of your income for this next year.

PRESIDENT MANN: We will now have a song by Buster Patterson.
Vocal solo.....Buster Patterson

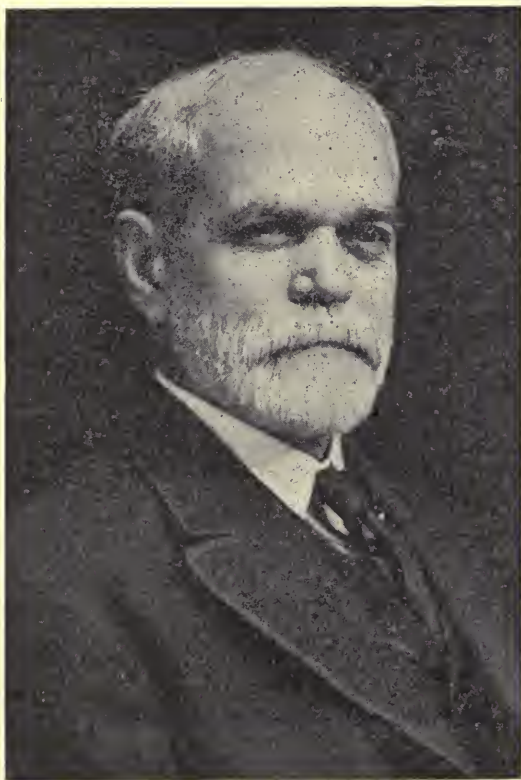
PRESIDENT MANN: No one has had a greater influence in the development of the agriculture of the State in the last more than a quarter of a century; no one has had a greater influence in the development of the Farmers' Institute; no one has had a greater influence in directing the energies of the Farmers' Institute along those lines necessary for it to perform its best function than our next speaker. I cannot help but frequently think of him in connection with Simonides, that great old character in Wallace's "Ben Hur," who sat in his chair and managed the commerce of the world; not that he moved the ship or loaded the cargoes, but that his wisdom extended throughout the universal world and directed its commerce. So this man has sat in his chair and influenced the development of agriculture in this State, just as old Simonides did the commerce of the world in

the old days. Every step, every forward movement in this State along the agricultural line has been influenced by the wisdom of this man. This is not a farewell address. It is true this man is to leave the State, and in a way perhaps it is a farewell address in his official capacity; but I cannot help but believe that the wisdom of this man is going to be extended personally and by the use of the pen for many years to come. I want to present to you now Dean Davenport—it is almost unnecessary to mention his name in this connection—who will now speak to us. [Applause.]

THE ILLINOIS FARMERS' INSTITUTE AND ITS JOB.

(E. Davenport.)

It is now considerably over a quarter of a century since the Illinois Farmers' Institute entered upon one of the most useful and forward looking programs that ever engaged the activities of any agricultural organization.



DEAN DAVENPORT

It is not my purpose to attempt a review of this notable service to agriculture. My purpose is rather to call attention to some special features of this work as they have come to my attention, partly by way of grateful acknowledgment for personal and official assistance, but more especially to call attention to the kind of work the Farmers' Institute is especially well prepared to undertake.

I am the more encouraged to call attention to the achievements of the Institute in the past and its opportunities for service in the future because the question is sometimes asked: "Why do we need so big a machine for so small a grist; and cannot somebody else hold the institute meetings as well as the State Institute, the Agricultural College or the Department of Agriculture, for example?"

In one form or another I have been asked this question many times, and I have always answered in effect that if it is only the county insti-

tute meetings that are in mind, or even the annual state meeting, like the present great gathering, almost any public agency could make the arrangements, hold the meetings, and run off the programs as well as can the State Institute. I have even gone further and said that if we had nothing in mind but public meetings, I am not sure but that the College could beat the Institute. Indeed, I am not certain but that the State Department of Agriculture could beat either of us—for a time,

UNSELFISH PUBLIC SERVICE.

"For a time," I say, because to me the great thing about the Illinois Farmers' Institute is not the meetings held, great as they are, whether county or state, but *the great thing about the Illinois Farmers' Institute is the Institute itself.*

This is what I mean: It matters not so much that we have meetings and programs, or even that the meetings and programs are good. What matters is that the programs shall include subjects and ways of treatment that represent the best thought of the most progressive farmers of the State, not only in certain lines of agricultural progress, but in any and all lines, especially those most likely to be overlooked and neglected by the other organizations.

For example, we may confidently expect that the Horticultural Society will look after the affairs of horticulture, especially in its commercial aspects. In the same way the various breed associations will take care of the interests of their respective breeds of horses, cattle, sheep and swine. The Dairy Association will look after dairy matters, and if anything is overlooked or falls between, it would seem that the Grange, or the Illinois Agricultural Association would find it.

And yet *every one of these organizations has a rather definite program that fully occupies its time and attention*, especially the newest of all, which is really the federation of County Farm Bureaus and the parent extraordinary to a multitude of local sub-organizations for the attainment of ends that in general fall under the rather broad head of the business side of farming.

Without the Farmers' Institute we should lack an open forum managed by the farmers themselves for the discussion of all such questions as may *interest them—not somebody else.* The Institute has been such a forum, and as long as Illinois can secure such management of what shall be discussed from that forum year by year in county and in state meetings, and get all this for the bare cost of the traveling expenses of a quarter of a hundred representative farmers—just that long she will be lucky indeed.

NO FOOLISH PROPAGANDA.

It is therefore not so much that we have one hundred and two county meetings and a big State roundup every year, but rather it is *the trails that are blazed* at these meetings that count, and it speaks well of this management that during all these years with their troublous times *no foolish propaganda has been permitted, and no extravagant ground has ever been taken.*

On the other hand, this Institute has taken some exceedingly *advanced ground with regard to agricultural progress*, and it is that to which I would call attention, particularly such portions of this service as have come under my personal observation and within my own field of knowledge.

For example, it was from the platform of the Institute that the campaign for better roads was originally promulgated and shaped up gradually into what would seem feasible procedure. In this way was prejudice turned into intelligent interest, and there is probably no better example of what can be done by consistent and conservative study of large questions in ways that are really constructive and publicly understood.

What the Institute has done for the home must not be forgotten, for some of the earliest and best suggestions for home improvement came through its publications. Not only that, but the Institute afforded the medium whereby pioneers like Mrs. Dunlap, Mrs. Kedzie Jones, Professor Bevier and their followers have, year after year, in season and out of season, reached multitudes with the gospel of better homes. But it is within the field of agriculture that I would more particularly speak.

BIG JOBS WELL DONE.

The first great job undertaken by the Institute was the rejuvenation, or, more properly speaking, *the reincarnation of the College of Agriculture* at the State University. The Institute was hardly out of its swaddling clothes

when this job was undertaken, but like Minerva of old, the giant was born fully matured, as events proved, and through its medium of expression and influence the farmers of the State made not only their wishes but also the necessities of the situation known.

It was a *purely unselfish service in the interest of the whole public* and has been so regarded. There were other agricultural organizations, and good ones, but none so well cut out for this particular job as was the Farmers' Institute. *It was the agency by which public opinion was crystallized and expressed*, by which Amos Moore, James H. Coolidge, S. Noble King, Charles F. Mills, A. P. Grout, N. B. Morrison, Ralph Allen, Frank I. Mann and a host of others, many of whom have long since gone to their reward, showed the State at once its duty and its opportunity.

If the Institute had never rendered another public service than to function as the means of providing Illinois with a real College of Agriculture, it would have fully justified its existence.

But that was only a beginning. A real study of Illinois agriculture from the standpoint of science and of progress showed at once the place that research and experimentation must take in the scheme of State development in the field of agriculture, and a systematic study of the soils of the State was begun under the special patronage and support and advice of the Institute.

It was many years ago that *through the activities and at the solicitation of the Farmers' Institute the State Soil Survey was begun*, and it has continued uninterrupted ever since. It is at once the most thorough, the most exhaustive, the most beneficial, and the most far reaching study of the soil ever entered upon by any state or any nation of the earth.

INDEPENDENT SELF MANAGEMENT ESSENTIAL.

This is my answer to the question whether or not the University could conduct the institutes better than the Institute. The institutes with a little "I" are meetings, and almost anybody could conduct them if he could get people to attend. But the Institute with a big "I" is an institution, and *it cannot be "conducted," or "held," or otherwise managed except by itself.* *To attempt to put any one of its creatures over it is to destroy it.* Nor must we mistake the shadow for the substance by assuming that when we have attended an institute meeting we have seen the Institute.

The institute as a meeting is good or bad according as the immediate officers were wise or unwise in choosing topics, the speakers in treating them, and the attendance in giving real attention to the subjects under discussion. But the Institute as an institution is as good as the men that make it, and as long as the best men will volunteer into its service for their expenses only and will give it the best of their thought, just so long will it be our most elastic and at the same time *the most powerful single agent of progress, especially along lines likely to be neglected by leading and direct commercial interests.*

For example: Out of the survey and the experiments in the behavior of our different soil types has grown the idea of a System of Permanent Agriculture. Some have called it the "Hopkins System," because that great man was practically the inventor, as he was also its most ardent and able exponent. Some have called it the "Illinois System," because it was worked out in Illinois and the details have been so widely criticized elsewhere.

It might be called the Common Sense System, because it stands to reason that we must put back as much as we take off if our successors are to maintain themselves. It might be called the Inevitable System, because we shall all be forced to it, the only question being whether it shall produce at a high or at a starvation rate.

It might be called the *Farmers' Institute System*, because that has been the popular agency that has sustained it all these years, and given it a hearing and a sympathetic trial.

Whatever it may or may not be called—and what's in a name after all?—the thing is with us to stay. What is Illinois going to do with her soils? is a question that the Farmers' Institute has asked, not only through the researches of the Experiment Station, which it helped to endow, but by its

own activities, its own discussions, and indeed its own convictions that questions of fertility do not solve themselves.

Yes, the question is with us to stay. Our great leader, Dr. Hopkins, is gone. Peace be to his ashes; his memory is ever green with us, but let his findings and the deliberations of the Farmers' Institute be not forgot.

IMPORTANT WORK AHEAD.

To this great work the Farmers' Institute is called, as much as any body of men was ever called to any great service, and I fervently hope that while it heeds the call and follows it, no man will ask the question whether some other body or agency could not do its work more cheaply. The thing that the Farmers' Institute has begun and can continue is what will stand between Illinois and the decadence that has threatened every civilization on earth and that has overtaken and destroyed most of them that have stood for any considerable period of years.

Our fertility and its preservation is not the only great question that awaits the good offices of the Farmers' Institute. Illinois should speedily enter upon a home building era such as the agricultural world has never seen. The time has come now when the country home can be a thing of comfort. We should not make the mistake that France made when building her permanent homes and build them so small or of such character that they cannot be equipped with modern conveniences. A country cannot rebuild its homes every generation. Permanent homes should be built in the youth of a country, while it is strong and rich and before it becomes over populated from expending all its strength in numbers.

All this means many problems for a State like Illinois, and *the Farmers' Institute has a mighty work to do in thinking out these long thoughts ahead* and talking about them year after year, because the form of our advancing civilization must develop by plan and intention and not "just happen."

We are going into a *new agriculture and in many respects a new civilization*. Within another quarter of a century the center of population will be within the borders of Illinois, where it will probably remain indefinitely.

We have the fourth largest city in the world, and in time it will be the most important. We are at the center of the greatest agricultural land area of the world, which has also coal and oil under the surface and the best of transportation possibilities both by land and water, connecting it with the most populous and the most highly civilized of all the nations of the earth. Out of this development will rise multitudes of questions that will need *exactly the kind of foresight and breadth of vision that can be supplied only by a state-wide, non-commercial agricultural organization such as the Illinois Farmers' Institute.*

Illinois must not come short of her opportunity and her obligation in all this, and if she is to live fully up to her possibilities as she goes along she needs just such a monitor and just such a forum as the Farmers' Institute can provide. Here lies the job for the Illinois Farmers' Institute.

Mr. ABBOTT: Mr. Chairman, Ladies and Gentlemen: In view of the fact that the relation which has existed for twenty-five years between Dean Davenport and the College of Agriculture is about to be severed, I move that for his labor and help in this work we give him a vote of thanks by rising. (Vote of thanks given.)

DEAN DAVENPORT: I assure you that is very deeply appreciated.

PRESIDENT MANN: Now, I think we have had a good week. We have had good speakers, and we have had a good attendance, and I think we have gradually led up to the climax this afternoon. In addition to the thanks that are expressed in the resolution this morning, I want to further express to all here, to the churches who so efficiently served us, to the Model City Florist and others for the flowers they have sent in, and to the people of Monmouth for having created that atmosphere in which we have lived for a few days, the appreciation which I am sure we all feel. They have given us a hearty welcome and made us feel at home. Let us remember the better and higher things which we have heard here all week. We will close our week's Institute. Thank you very much for your attendance. We will now be excused.

I LOVE THEE ILLINOIS.

(By S. B. Mason, Director 17th Congressional District.)

S. B. Mason.

I love the waving fields of grain,
 The dawning skies of gold and sun,
 The twilight hours when day is done;
 It's all in Illinois!

I love the prairies and the dells,
 The cheering breeze that swells
 And dies again with evening bells
 In Illinois, dear Illinois!

I love the gorgeous yellow flowers
 That autumn brings in shady bowers,—
 Delightful days and sunny hours;
 In Illinois, blest Illinois!

I love the groves and plains and fields,
 The richest soil that plenty yields,—
 The restful hope one always feels
 In Illinois, my Illinois!

In thy country's need—a son,
 Heroic men who victory won;
 I love thee for what thou hast done
 Oh, Illinois, great Illinois!

Here lie the green graves of our sires,
 Of men who fought our country's wars,
 The loved and lost of passing years,
 In Illinois, my Illinois!

MINUTES OF THE MEETINGS

of the

Board of Directors and Various Committees

of the

ILLINOIS FARMERS' INSTITUTE

For the Fiscal Year Ending June 30, 1922

MINUTES OF THE MEETING OF THE BOARD OF DIRECTORS HELD
IN THE INSTITUTE ROOMS, SPRINGFIELD, AUGUST 24, 1921.

Pursuant to the call of the president, the meeting of the Board of Directors was held in the Institute rooms, Springfield, August 24th, 1921, at 10 o'clock A. M.

Present: Directors Barrett, Burroughs, E. W. Burrows, J. B. Calhoun, Curtiss, Gregory, Hopping, Mann, Mason, J. P., Mason, S. B., Pickett, Switzer and Tullock. Dr. Wilson, president of the Household Science Department was also present.

The minutes of the previous meeting were read and approved.

The secretary presented the following report:

To the Board of Directors:

As a result of the spring conferences, which were exceptionally well attended, the county and local institute schedules and assignments have been prepared and published as Bulletin No. 28. This bulletin contains schedules for 96 counties, and lists a total of 823 institute sessions, the total number of speakers assigned to these meetings being 163 of which 116 are from the institute and 47 from the University and State Departments. The schedule lists 340 days of institutes, at 211 meeting places, representing a total of 1,024 days services which will be rendered by the state institute during the coming season.

Of the 6 county schedules not listed in this bulletin, at least 3 will be completed later. We are therefore assured that of the 102 counties in the state all but a possible two or three will hold two or more days of institutes this year. Several counties which did not hold institutes last season are in line again this year, and increased interest in the work is noted in many others.

The schedules are being mailed to all the county institutes, and Household Science Department officers, the speakers, county superintendents of schools and county advisors. Copies are also going forward to the directors.

Several new publications have recently been issued, including bulletins on corn disease investigations, phosphate and limestone storage bins, and a southern Illinois bulletin. The one on corn diseases is the first of the kind to be issued in Illinois, and the need and demand for same promises to be great. Already over 10,000 copies have been distributed, practically all on request. Several thousand copies were supplied the University, and a good many calls from county agents have been filled.

Copy of the 1921 annual report is already on the press and we are assured of its early delivery. The report of the Household Science department will be in the hands of the printer soon, and it is expected that both reports will be available for use at some of the fall institutes.

Distribution of last years' report is about completed, and the supply for general distribution is practically exhausted.

The appropriations for the Institute for the biennial beginning July 1st, 1921, were made by the General Assembly and approved by the Governor, in accordance with the requests submitted in the budget through the State Finance Department. It is expected that those amounts will amply provide for the present work of the Institute, and possibly allow for some needed lines of extension, especially in the way of wider dissemination of institute publications.

Your attention is again called to the free scholarships in Agricultural Household Science at the University of Illinois through the State Institute, and the importance of interesting as many young men and women as

possible in securing these scholarships for the coming year. The total number of scholarships available in each course is 110 for the state, and to date only a little more than one-third this number have been applied for and granted. The requirements provide that all applications be received and the nominations made on or before the last registration day of the semester in which the applicant intends to enter the University. Any one interested in securing one of these scholarships for the coming year should be urged to file their application at an early date, as only a few weeks remain before the beginning of the school year.

Since the last meeting of the Board two of your honored members have passed to their reward, Directors J. P. Gilbert and Edward Grimes. Director Gilbert died at his home in Carbondale, April 10th having served as a member of the State Institute Board since 1918. Directors E. W. Burroughs, D. M. Marlin, O. L. Wakefield and J. B. Burrows attended the funeral. Director Grimes passed away at his farm home near Raymond July 29th. He was first elected as director in 1903, and served continuously as a member of the Board since that date. The Institute was represented at the funeral by Directors Allen, E. W. Burroughs and J. B. Burrows. Mrs. McKeene, Mr. Fleming and your secretary were also present at the services.

With the passing of these Directors, two vacancies exist in the membership of the Board, one in the 21st congressional district, and comprising the counties of Sangamon, Christian, Montgomery and Macoupin, and one in the 25th congressional district, comprising the counties of Alexander, Franklin, Jackson, Perry, Pulaski, Randolph, Union and Williamson. The filling of these vacancies, or the consideration of same, rests with the pleasure of the Board.

Respectfully submitted,

H. E. YOUNG, *Secretary.*

On motion, the report was accepted and placed on file. The president reported progress on the work of the committee appointed by the Institute to cooperate with the Illinois Agricultural Association in an endeavor to secure lower freight rates on limestone and phosphate. As a result of the work of this committee rates upon certain roads have been materially lowered and further decreases are expected.

Moved by Director Burroughs that the president appoint a committee of three to draft resolutions relative to the deceased members.

Seconded and carried. The president appointed Directors Burroughs, Gregory and Tullock as members of this committee.

Moved by Director Burroughs that Prof. R. E. Muckelroy of Carbondale, be elected to fill the vacancy in the 25th Congressional District. Seconded and carried.

Moved by Director Burroughs that Mr. W. E. Holben of Edinburg, be elected to fill the vacancy in the 21st Congressional District. Seconded and carried.

Moved by Director J. P. Mason that president Mann be elected to represent the Institute on the Farm Organization and Management Committee which is being formed by the Farm Management Department of the State University. Seconded and carried.

Moved by Director Gregory that a standing committee on Farm Organization and Management be created with the president as chairman. Seconded and carried.

The secretary announced the appointment by the president the committees for the ensuing year:

Executive: Frank I. Mann, Ralph Allen, Frank S. Haynes, C. V. Gregory, W. G. Curtiss.

Auditing: Chas. Gray, August Geweke, G. G. Hopping.

Legislative: Frank S. Haynes, E. W. Burroughs, Clayton C. Pickett, John E. Barrett and W. E. Holben.

Household Science: S. B. Mason, J. P. Mason, John E. Barrett, W. G. Curtiss, H. Clay Calhoun.

Secondary Education in Agriculture and Household Science: A. C. Page, Eugene Davenport, R. E. Muckelroy, F. G. Blair, W. G. Fulton.

Highways: E. W. Burroughs, Geo. A. Switzer, D. M. Marlin, L. L. Wakefield, Wm. E. Meier.

Agricultural Books: Eugene Davenport, F. G. Blair, J. B. Burrows, L. C. Brown and A. C. Page.

Entomology: J. B. Burrows, Geo. F. Tullock, L. C. Brown.

Soil Investigations and Experiments: Ralph Allen, F. I. Mann, A. N. Abbott, Geo. F. Tullock and O. L. Wakefield.

Moved that these committee appointments be confirmed. Seconded and carried.

Director Burroughs reported the following resolutions, which were unanimously adopted:

WHEREAS, Our respected and beloved fellow member, Director J. P. Gilbert, of the 25th Congressional District, has been called to his reward.

Be it Resolved: That in the passing of Director Gilbert, the Farmers' Institute and the agriculture of the State at large has lost an active, untiring and unselfish friend and benefactor whose constructive work as a leader and teacher along educational and improved farming lines will long be remembered and lastingly appreciated, especially throughout Southern Illinois where Mr. Gilbert labored so faithfully and successfully in the interests of better rural conditions.

Be it Further Resolved: That a copy of these resolutions be made a part of the official record by incorporating in the minutes of the Board.

E. W. BURROUGHS,
(Signed) GEO. F. TULLOCK,
C. V. GREGORY.

WHEREAS, Death has removed from this life Director Edward Grimes, who served as a member of the State Institute Board from the 21st Congressional District continuously since his election in 1903.

Be it Resolved: That the Illinois Farmers' Institute has lost a devoted and untiring worker whose long service will always be remembered; that Illinois Agriculture has lost a true and tried friend and the State one of its most useful and public spirited citizens.

Be it Further Resolved: That a copy of these resolutions be made a part of the official record by incorporating in the minutes of the Board.

E. W. BURROUGHS,
(Signed) GEO. F. TULLOCK,
C. V. GREGORY.

Announcement was made of the call for a meeting of the executive committee to be held at Monmouth, September 8th at which time definite arrangements of the state meeting would be made.

On motion the Board adjourned.

Respectfully submitted,

Approved, November 29, 1921.

H. E. YOUNG, *Secretary.*

MINUTES OF THE MEETING OF THE EXECUTIVE COMMITTEE HELD AT MONMOUTH, SEPTEMBER 8, 1921.

Pursuant to the call of the president a meeting of the Executive committee was held in Monmouth, September 8th, 1921.

Present: Directors, Mann, Allen and Curtiss.

The committee inspected the facilities offered for the holding of the state meeting in February and conferred with representatives of the Chamber of Commerce, County Farmers' Institute and County Farm Bureau regarding detailed arrangements and program. The new state armory building was found to be ideally located, and equipped as a meeting place for the

institute, and while the hotel facilities of the town are not as commodious as might ordinarily be required, the assurance of plenty of available rooms in private homes was considered sufficient to warrant the location of the meeting.

On motion duly made and carried, and as a result of its visit of inspection, the committee formally accepted Monmouth as the location of the State Institute for 1922.

On motion the committee adjourned.

Respectfully submitted,

H. E. YOUNG, *Secretary*.

Approved, November 29, 1921.

MINUTES OF THE MEETING OF THE BOARD OF DIRECTORS HELD IN THE STOCK YARDS INN, CHICAGO, NOVEMBER 29, 1921.

Pursuant to the call of the president, the meeting of the board of directors was held in the Stock Yards Inn, Chicago, November 29, 1921, at 10 o'clock, A. M.

Present: Directors Allen, Barrett, Brown, Burrows, J. B., Calhoun, Curtiss, Geweke, Gregory, Haynes, Holben, Mann, Marlin, Mason, S. B., Muckelroy, Pickett, Dr. Wilson, Mrs. Bradt and Mrs. McKeene, of the Department of Household Science were also present.

The minutes of the previous meeting were read and approved.

The secretary reported increased interest and attendance at the fall meetings. Additional schedules in several counties were also announced.

The president spoke of the work of the Limestone and Phosphate committee, citing the results secured in reference to a readjustment of freight rates in the interest of Illinois farmers. Because of a conflicting meeting of this committee with railroad officials in the city, he asked to be excused, calling the vice-president to the chair.

The secretary presented a tentative outline of the program for the annual meeting, and Mrs. McKeene spoke of the plans for the household science department sessions. After full discussion these programs were approved and the secretary authorized to complete the details as decided upon.

A general discussion of the institute work emphasized the value of close co-operation between all organizations and agencies interested in better agriculture, improved rural community and home conditions throughout the State.

On motion the meeting adjourned.

Respectfully submitted,

H. E. YOUNG, *Secretary*.

Approved March 7, 1922.

MINUTES OF THE MEETING OF THE BOARD OF DIRECTORS, HELD IN THE INSTITUTE ROOMS, SPRINGFIELD, MARCH 7, 1922.

The Annual Meeting of the Board of Directors was held in the Institute rooms, Springfield, March 7, 1922, President Mann presiding.

Present: Directors, Barrett, Brown, Burroughs, E. W. Calhoun, Curtiss, Davison, Geweke, Gray, Haynes, Holben, Hopping, Mann Mason, S. B. Pickett, Simpson, Switzer, Tullock, and Wakefield.

Dr. Wilson and Mrs. McKeene were also present.

The minutes of the previous board meeting were read and approved.

The Secretary presented the following report:

To the Board of Directors:

In reviewing the activities of the Institute for the year just closing, the outstanding feature is the increased interest and activity throughout the State. The season has proved a most successful one from all stand-

points, especially from that of attendance at both county and local meetings. The institutes have invariably been well attended and in the great majority of counties the audiences have filled the halls during all sessions.

At the district conferences held last spring all but six counties were represented, and schedules were arranged accordingly. Two of the counties which did not schedule institutes at these conferences, arranged for meetings later in the season, so that of the 102 counties in the state only four failed to do any institute work. A number of additional institutes were scheduled, several of these being in counties in which the interest has heretofore not been the best. In both interest and attendance these additional meetings have been remarkably successful.

Approximately 372 days of institutes at 231 points in 97 counties representing a total of 963 sessions, and 1086 days of institute service have been rendered by the state Institute during the season. The summary by counties shows that five or more days of institutes have been held in twenty counties, and that in 68 counties three or more days is the record. Seven counties have held eight or more days and in five counties ten days or over has been the rule.

To date, detail reports of the season's work have been received from seventy-four counties, and while a summary of these reports at this time does not give the complete data for the year, it is of importance indicating the condition of the work in these seventy-four counties. Such a summary shows 240 days of institutes and 755 sessions with a total attendance of 91,846 persons. Complete figures covering all the counties, cannot be given until reports from the remaining counties are received.

The number of speakers assigned to institutes during the year totals 188, of which 136 have been from the institute and 52 from the State University and state departments.

In this connection, the co-operation which the institute is now receiving from other organizations is worthy of special mention. The past season has effected a better understanding of the organization, objects and purposes of the institute, and its work has in most counties demonstrated not only the need for continued institute activity but has pointed the way to increased usefulness as an educational institution. The tendency toward better co-operation and closer relationship between all organizations, particularly the county institute and the county farm bureau, is very noticeable, and can not help but make for better results and greater accomplishments. This co-operation should be encouraged.

Briefly stated, the records of the season's work shows more meetings, larger attendance, wider interest and better co-operation from individuals and organizations, than any previous year in the history of the Institute.

THE STATE MEETING.

The recent annual meeting at Monmouth was very well attended from over the State, some 76 counties being represented at the various sessions. Weather conditions which made the roads impassable greatly reduced the expected attendance from Warren and adjoining counties. Despite this unpreventable disappointment the average attendance at the various sessions was conservatively estimated at from 700 to 1200.

While the advertising of the State Meeting was general, a special effort was made to reach the public in that section of the state within a radius of 50 to 75 miles. Several new plans for gaining effective publicity were tried, and in the main seemed to show very good results. Including the programs, more than 70,000 pieces of advertising matter were used, the distribution of which was thoroughly planned and carried out. The newspaper publicity both before and since the meeting was exceptionally pleasing.

The co-operation extended by the Monmouth Chamber of Commerce, the Warren county farm bureau and other local organizations was excellent and aided materially in making the meeting a pronounced success.

PUBLICATIONS.

During the year, the requests for Institute publications have increased to such a volume that one supply of both Annual reports and bulletins is now practically exhausted. Never have the calls for these publications been so numerous and persistent as during the past season. Because of the demand, second editions of these different bulletins "Corn Disease Investigations", "Limestone and Phosphate", and "Modern Agriculture in Southern Illinois", have been published, notwithstanding the fact that the number first printed was considered an ample supply for all purposes. Over 25,000 copies of the "Corn Disease Investigations" bulletin have been requested for use over the state, and requests for it are still coming in daily. For the other two mentioned, over 10,000 calls have been received since their publication, and unless the demand ceases some additional copies will have to be printed.

The 1921 Annual reports are all out except a small supply of the cloth bound copies. Over 20,000 copies of this report have been requested since it became available for distribution in the fall. The distribution of both the reports and bulletins is governed entirely by the requests received for them, as no copies are sent out except to persons who indicate an interest in receiving them. The number of annual reports printed each year is governed by the number of requests received for that publication the previous year. The policy to publish no more than are actually demanded for use by interested people from year to year was established four years ago and has since been followed. We believe that this policy is the only business one to pursue, and are convinced that experience is justifying this course.

In addition to the annual reports and bulletins issued during the year an ample supply of new score cards for farm and home products have been printed for general distribution, wherever called for.

UNIVERSITY SCHOLARSHIPS.

A growing interest is noted in the special scholarships which are offered by the University of Illinois through the medium of the State Farmers' Institute. During the year 48 young men have been nominated for scholarship in the College of Agriculture and 37 young women have been nominated for Household Science Scholarships at the University. Under the rules of the University Trustees, these scholarships are limited to one in Agriculture, and one in Household Science, to each county, except Cook and Lake, and one to each of the first ten congressional districts in the state. It is possible, however, to take care of additional candidates from any one county, by assignment to other counties or districts from which there are no accepted candidates. Applications for scholarships beginning at the fall semester are already being received, and early filing of all applications, in order to avoid any possible disappointments, is urged.

FINANCIAL STATEMENT, MARCH 1, 1922.

The following is an itemized statement of funds appropriated, for the current year, amounts expended, and the balance on hand March 1, 1922, as classified in the office of the State Auditor:

Name of Account	Appropriation	Bills Paid	Balance
Salaries	\$8,720.00	\$5,793.28	\$2,926.72
Office Expense	2,125.00	1,032.73	1,092.27
Reporting	700.00	700.00
Per Diem	7,000.00	5,442.50	1,557.50
Directors' Expense	6,000.00	1,117.13	4,882.87
County Institutes	7,650.00	5,032.59	2,617.41
Contingent	100.00	100.00
Equipment	750.00	750.00

RECOMMENDATIONS.

In conclusion, the following suggestions are presented for your further consideration:

The schedule of the District Conferences should be definitely decided upon at this meeting. Suggestions regarding same should be made known to the secretary before adjournment, in order that announcements may go forward immediately to the county officers and others interested in attending these meetings. Members of the Board can render considerable aid in securing a full attendance from the various counties and in making these conferences of the utmost value.

Attention is called to the urgent need for more institute speakers. The assistance of Board Members in locating new and additional material for the speakers list is urgently requested. Consideration of the present list of speakers should be given attention at this time.

The importance of county officers, and others who may have charge of local institutes, adhering strictly to the printed schedules of assigned speakers need be emphasized by the directors generally as they come in contact with the workers in their several districts. The fact that the State Institute can not take care of the fees of speakers except as they are assigned through the state office, should also be made plain to all county officers.

While the number of applications for free scholarships in the State University from both young men and young women, compares favorably with previous years, the list of nominations is not as large as it should be, considering the opportunities offered by these scholarships. Lack of information rather than lack of interest, is probably the chief reason why these scholarships are not more generally requested. Members of the Institute Board can help in bringing this matter to the attention of boys and girls who are deserving of encouragement in their desire to obtain University Training.

Experience of the last few years has demonstrated the importance of more adequate facilities, especially that of hotel accommodations, for the holding of the Annual State Meeting. Because of this fact, it is suggested that more attention be given this matter in the selection of meeting places for future State Institutions. The advantages offered from the standpoint of hard roads leading to places asking for the meeting, is also suggested as a matter of growing importance deserving of more serious consideration than has heretofore been given.

The program of the Monmouth Meeting presented several speakers whose addresses, or digest thereof, might well be issued in circular form in addition to publication in the Annual Reports. This suggestion applies to both the institute and household science department programs. Early publication and distribution of the address of Dean Davenport, Mr. Thorne, President Mann, Mr. Vrooman, and several others would seem especially advisable. We hope it will be possible to disseminate some of this practical and worthwhile information in this way at an early date and anticipate your approval if such can be accomplished. The details of the demonstration given by Mrs. Mann were published before the meeting and copies for use at Monmouth were provided, the balance of the addition are expected from the printer this week.

The outlook for the coming season's Institute work is excellent. The live interest displayed in the work the past year points to even greater interest and activity next, and there is every reason to expect still better results in the various counties. With all working together, a new record can and will be made for 1922-23.

Respectfully submitted,

H. E. YOUNG, *Secretary*.

On motion the report was accepted and ordered placed on file.

Moved by Director Burroughs that the recommendations of the Secretary be referred to the new board upon its organization. Seconded and carried.

Moved that the visiting delegations be received at 1:15 P. M. each being given ten minutes to present its claims for the next annual meeting. Seconded and carried.

The secretary read a letter from Dean Davenport, in which, as chairman of the committee on Agricultural Books, he reported the committee's approval of Dr. Carver's new work entitled "Principles of Natural Economics", recently published by Ginn & Co.

President Mann spoke of the work of the committee on Soil Investigations and Experiments and its relation to the University, explaining that under the ruling of the Board of Trustees the State Institute is requested to submit the names of three Directors from which the Trustees will appoint the members of this committee. Mention was also made of the fact that one of the requirements made by the University is that members of this committee must not only be farmers but must actually live and reside on a farm.

The Secretary of the Department of Household Science presented the following report:

To the President, Officers and Board of Directors of the Illinois Farmers' Institute:

Gentlemen: It is always a pleasure as well as my duty to bring you a brief review of the year's work of our Department. It is not the services of your secretary but the faithful team work and co-operation of the institute Board, the club and county household science officers, the speakers, all who have made the interest of the year just closing.

In looking backward the thought comes to us, often, what have been the achievements of the Department, one of the oldest organizations in the state for the education of homemakers? What has been done to make the business of housekeeping the greatest profession for women and to interest them to realize that it is not drudgery, but an art for every woman who presides over the institution called HOME.

We could not make a report without paying tribute to the Board of Directors of the Illinois Farmers' Institute who have always been our great support and with whom we work in harmony year after year. Why not such close organization? Men and women are partners in the business of home making and the problems to be discussed and solved belong to all. The Department is a helpful auxiliary of the institute and there is no stronger body of men and women existing in Illinois today which reaches out to every profession—every home—that we may be better fitted for the job which is ours.

THE OBJECT.

The object of the Department of Household Science has always been the advancement of all the interests of the home and that woman's work of housekeeping and homemaking should be made a subject for systematic study. We have encouraged young people to become interested and to have a part in the work. Household science clubs and parent teachers' associations have been organized, all for the purpose of making better homes, better schools and a better citizenship.

From a beginning small we have grown to be an organization which will never finish its work until every home in Illinois has been touched. Sometimes the past year we have been told that the Household Science Department is out of date and that it is no longer needed, but I ask you if there is not a great work yet to be done when every woman is a part of the institute without fees and dues and can have a voice in the discussions of every subject before us?

I wish I could go back and recall each step in the growth of our Department but it cannot be done in a brief report. It may be of interest for you to know where the meetings have been held since the first annual in 1898. The first meeting was held in Princeton with the Farmers' Institute and a part of one day was given to the women for their program. In the succession the meetings have been held—Princeton, Mt. Vernon, Jacksonville, Rock-

ford, Bloomington, Decatur, Joliet, Olney, Quincy, Peoria, Rockford, Edwardsville, Ottawa, Centralia Sterling, Galesburg, Harrisburg Decatur, Streator, Bloomington, Joliet, Carbondale, Danville and Monmouth. Besides the annual meetings, Paris, Lincoln and Cairo had institutes one year. These taking the work over all sections of the state.

DEVELOPMENT.

We have seen development along many lines and have played no small part in making the housekeepers course at the University of Illinois what it was for years. Broad contests were held in the counties during institute season and a free trip to the short course was given the successful contestant. The institute and household science presidents have signed all the applications for the State Fair School of Domestic Science, one of the most popular fair attractions in Illinois and which has been in existence 23 years. This school has inspired many young women to take a higher course in home economics and the profession of nursing.

The Department has always been interested in putting household science in the schools, both town and rural, it is supported the first canning school in the state and promoted the canning club movement. It co-operated with the better babies' conference being one of the first to put on a conference. It worked for the organization of boys' and girls' clubs and we stand ready to-day to co-operate with every organization existing for a bigger and better work. One aim has been ours—attempting larger things for the homes of Illinois, for we realize that the future greatness of the country will be measured by the standard of the homes (and citizens found within them.)

NUMBER OF CLUBS.

Today we have 360 clubs to report. During the year 38 new ones were reported while 22 were lost to the home bureau and federation of clubs. Three counties, only, are without county departments, but they have individual clubs. Menard came in this year with officers and three institutes. Strong county organizations with local clubs as auxiliaries are our hope for the new year.

MEMBERSHIP.

That it may always be clear to you I will repeat what has been said about our membership. The membership consists of county household science clubs affiliated with the county farmers' institutes and other local clubs which are actively engaged in household science study and work. Membership is limited to those clubs which are in actual affiliation with the farmers' institute and whose activities include at least six meetings during the year in which the greater part of the program consists of household science topics. All clubs to be affiliated must express a desire to affiliate with the State Farmers' Institute and report to the Secretary of the Department of Household Science the name of the club officers' names and other information as required. Household Science work is holding meeting, forming classes for girls in household science, forming canning clubs or in furthering such other activities as are recommended by the Executive Committee of the Department of Household Science. We have no fees, or dues, for affiliation. The inquiry comes to us from clubs about becoming a part of the federation of women's clubs. Must we affiliate? Our answer is we cannot see the need of household science clubs and departments paying dues to become a part of the federation. But also we do not direct that part of local organizations. Our Department accepts every woman in the state, in the county work and provides every help without money return. Let the household science clubs be free to keep the meetings throughout the year and let individual members become members of the woman's club when it is her desire.

It is the same with household science members joining other organizations and being asked to disband on account of too many meetings to

attend. We repeat, belong to as many organizations as we please as individuals but keep the household science club interest, Always.

CONFERENCES AND INSTITUTE WORK.

When the conferences were held last spring in the 25 Congressional Districts the secretary was present at each meeting. There was a very good representation of the county household science presidents who attended for the purpose of outlining the program for the woman's sessions of the county institutes, selecting speakers and discussing the work in general. The county presidents should not fail to attend these conferences for the work becomes more effective through personal exchange of ideas. Every woman is welcome, and at many conferences there is a large attendance of interested club members.

There were five U. of I. household science speakers assigned at the conferences for 14 days work, the speakers to appear before 23 sessions. From the Department speakers, 27 were scheduled for 301 days to appear before 472 sessions. Two special speakers gave 8 days service with 12 sessions; and 16 extra meetings were arranged after the bulletin was printed, making a total of 323 days and 507 sessions of household science work at county institutes. Only two counties in the state failed to schedule women speakers, at the conferences. (McHenry and Livingston.)

Never have we had better service from our household science speakers and the year closes with only a very few substitutions. In cases when it was absolutely necessary to substitute, owing to illness, the greatest support was given your secretary, and speakers responded in three instances in one hour's notice. Such co-operation is appreciated beyond expression.

A word further about the assignment of speakers. When certain ones are asked for we cannot promise that the schedule will be exactly as desired. Many counties select the same dates and speakers. The list as made at the conferences is always sent to the speakers and they select the counties to which they will go. Probably one county will have speakers for five days and another just one session. Which do you think she will take? It is not economy or good service to use so many speakers for one session each.

THE STATE FAIR SCHOOL.

The State Fair School is one of the greatest factors in creating interest among young women and last year several pupils returned to their homes and organized clubs or were elected to county department officers.

The 1921 session of the school stands as the best one in its history. One hundred and twenty young women were accepted and 113 were enrolled. The girls were always ready to do the work assigned them and they made the Board feel that they fully appreciated every moment of the two weeks spent together. Seventy-three counties were represented last year—a hope for 1922 is that all the counties will be represented.

UNIVERSITY OF ILLINOIS SCHOLARSHIPS.

The Household Science Scholarships given to the U. of I. last year number 37. Through the courtesy of the University and Farmers' Institute, these scholarships are available for representatives from each county in the state for the course in Home Economics. Three specials are given the highest grades for the State Fair School.

One scholarship is given to each county except Cook and Lake which have ten. The scholarships are given to high school graduates (or its equivalent) for two years and if the pupil matriculates it is good for two years more.

REFERENCE LIBRARY BOOKS.

The library reference books and bulletins have been called for the past year in large numbers, more than any previous year. 375 books and 400 bulletins have been loaned for club help besides typewritten articles for special subjects. No account can be kept of those requests. Many organizations not affiliated with us ask for program helps.—We try to serve all.

THE QUESTIONNAIRE.

Early after the conferences a questionnaire was sent to each club in the department and partial reports were returned from 203 not including the county reports. Since the clubs do not answer the questions in full the statistical report is not accurate in these figures, but some of the interesting things are mentioned. In answering the question when was your club organized we have these figures: one club in 1894; two in 1897, three in 1898, one in 1900, three in 1901, four in 1903, three in 1906, one in 1908, five in 1909, twelve in 1910, ten in 1911, twelve in 1912, sixteen in 1913, eleven in 1914, fifteen in 1915, ten in 1916, twelve in 1917, one in 1918, three in 1919, seven in 1920, nine in 1921 and five for 1922.

The total membership given for 203 clubs is 5,406, of which 2,853 are town and 2,553 rural members. Total attendance for the year 2,956. Eighty-four report monthly meetings, 35 semi-monthly and 3 weekly.

Meeting places—94 clubs met in the homes of members, 6 in churches, 16 in club rooms or libraries and 10 in schools.

Days of the week on which meetings are held—Monday 4, Tuesday 4, Wednesday 47, Thursday 23, Friday 24 and Saturday 10.

Time of elections—January 11, clubs elect, February 5, March 11, April 29, May 36, June 7, July 6, August 1, September 5, October 5, November 3, and December 7. It is impossible to have complete or comparative figures at this time.

One hundred and forty-six report printed programs for meetings, and the subjects for study include foods, 21 clubs, sewing 10, health 12, Circular No. 3, 30, Yearbook 12, School lunch 43, Civics 5, Household management 10, Americanization 3. There were 1,963 modern homes reported by clubs.

PUBLICATIONS.

The 1920 Year Book was off the press last March and 15,000 copies distributed. The State Fair School report compiled and 1,800 copies printed, the 1921 Year Book compiled and edited, 15,000 copies printed and ready for distribution, 5,000 copies of the Dress Form bulletin printed and ready for distribution. We also had our part of the speakers' bulletin No. 28. Forty thousand score cards for judging 20 exhibit articles have been printed and ready for use at institutes, (and other food demonstrations).

Just a word further about the score cards and exhibits. The 1921 Year Book contains all the score card figures and they should become familiar to every speaker and officer. They should be discussed and used. Exhibits, unless educational, have no place at an institute. The classification of exhibits should be given greater attention, and consideration, for the educational value means much not only to the exhibitor but to every woman who sees the exhibit.

CORRESPONDENCE.

No account, or estimate, can be given of the correspondence which includes all the club letters, correspondence with household science speakers, county officers, state fair school, state meeting and many special organizations. The secretary has done her own letter writing and endeavored to keep in touch with every phase of the work. Failures have been made but rush of work has sometimes been the cause.

THE STATE MEETING.

Publicity with distribution includes 7,000 programs, 3,000 songs (Illinois), 10,000 small posters, 10,000 folders, 300 credential blanks, 3,000 large posters, 10,000 Illinois stickers, 10,000 postcards, 15,000 blotters, 15,000 calendars, 1,000 reservation cards, 18 special cards for newspapers, 1,000 press sheets, 1,000 personal invitation cards and 800 press letters to clubs. The above material was all handled through the office, every member of the force doing team work early and late.

Summing up the club work we find that community service, supporting tuberculosis sanitariums, buying equipment for domestic science departments

in the schools, equipment for the hot lunch, supporting county nurses, child welfare work, putting music in the schools, buying home economics library books, working out club projects, and having special lectures on dietetics, textiles, household management, health, poultry raising, home dressmaking and use of machine attachments, and home dyeing, are some of the things done. Others are using moving picture machines on educational subjects for the home maker, keeping up community centers, teaching the work of the pressure cooker and studying family marketing.

Some good resolutions were passed at the Monmouth meeting, among them the following: Sensible children's clothes, more knowledge of household fabrics, need of more consolidated schools and county health centers, harmony in all home economic organizations, full attendance at the state fair school and good meeting places for institutes.

The officers elected for the coming year are: President, Dr. Eva M. Wilson, Manhattan, 1st Vice-President, Mrs. S. E. Bradt, DeKalb, 2nd Vice-President, Mrs. J. L. Van Gundy, Monmouth. The Department voted unanimously for the secretary to be recommended for another year.

Credentials were returned from forty-eight counties.

The secretary has been given a place on the membership committee of the new Illinois Home Economics Association. She has been named on the food and supply committee of the Illinois League of Women Voters. This will keep the Department in touch with all organizations in the State.

Respectfully submitted,

MRS. H. A. McKEENE, *Secretary*.

Moved that the report be received and placed on file. Seconded and carried.

President Wilson, of the Department of Household Science, spoke regarding the function of the committee named at the annual meeting of the Department in Monmouth, to confer with the University relative to more active co-operation in household science work, throughout the State. She also outlined plans for a rural home survey in which the Department is interested.

Moved that consideration of these matters be referred to the new board. Seconded and carried.

The secretary presented the following report of the Convention of Delegates held at Monmouth, February 22, 1922:

TRANSACTION OF THE CONVENTION OF DELEGATES, MONMOUTH, ILLINOIS, FEBRUARY 22, 1922.

REPORT OF COMMITTEE ON CREDENTIALS.

To the Convention of Delegates, Illinois Farmers' Institute, Monmouth, Illinois,

GENTLEMEN: We, your committee on credentials, beg leave to report that we have examined the credentials of the delegates representing the various congressional districts and find the following named persons entitled to seats in this convention:

Districts 1 to 10 inclusive, L. C. Brown, C. C. Pickett, Charles Gray, J. S. Denman.

District No. 11. E. A. Carnecross, Mrs. A. H. Seaton, C. V. Gregory, H. Lees, J. P. Mason, H. E. McDonough, C. J. Luther, Mrs. James Owen.

District No. 12. James Gough, D. L. Hilderbrand, John Burke, A. H. Wixon, George F. Tullock, Clinton T. Glenney, Fay Stewart.

District No. 13. Charles Bicklehaupt, W. G. Curtiss, Charles Arnold, Boyd Ritchie, G. A. Lazier, A. W. Johnson, A. N. Abbott, Edward Devine.

District No. 14. I. A. Whitcomb, G. A. Switzer, Otis Twaddle, J. E. Stickle, J. W. Sprout, R. D. Kyle, Carl Stewart.

District No. 15. Julius Cline, Dr. W. E. Mercer, F. A. Gougler, J. E. Mummert, Arthur Brown, J. W. Wertman, O. W. Hoit, W. K. Clifford, O. L. Campbell, E. M. D. Bracker, G. E. Gentle.

District No. 16. C. C. Pervier, Ferris Rowcliff, Oscar Graves, Ralph Allen, Jr.

District No. 17. Jas. Molloy, J. C. Meis, W. F. Coolidge, A. J. Bill, J. R. Holbert.

District No. 18. Chester R. Boland, Mrs. Elizabeth Gumm, John O. Honnold, O. L. Grey, George S. Hoff.

District No. 19. Herbert Grady, Charles M. Weller, C. C. Hendrich, John K. Wheeler.

District No. 20. C. E. Himmel, J. F. Sanmann, C. C. Juhl, C. W. Houghton.

District No. 21. Frank Hurrelbrink, Clair E. Hay, R. R. Hills, Lena D. Hills, Adelia Roberts, C. L. Whitlock, Mrs. Henry Mitts, Miss Clara Attebury, Col. W. F. Merriman, James E. Caldwell.

District No. 22. H. P. Patheal, Frank Troeckler, Henry Bartelmeier, Frank Schlemer, William J. Weber, Marcellus Hartman, Fred Mitchell, Sherman Stookey, W. F. Miller.

District No. 23. N. F. Goodwin, H. H. Bailey, Jos. Oldfield.

District No. 24.

District No. 25. Gilbert Bigham, Clinton Reith, O. G. Broleman.

(Signed) O. W. Hoyt,

E. WRIGHT ALLEN,

Committee on Credentials.

REPORTS OF DELEGATES.

The delegates representing the odd-numbered congressional districts held their elections and reported to the convention the election of Directors for the ensuing term as follows:

1st. District. Ira B. Reed, Glen View.

3rd District. Adam Schilling, Tinley Park.

5th District. C. V. Gregory, Chicago.

7th District. Chas. Gray, Chicago.

9th District. Clayton C. Pickett, Chicago.

11th District. J. P. Mason, Elgin.

13th District. W. G. Curtiss, Stockton.

15th District. Frank S. Haynes, Geneseo.

17th District. S. B. Mason, Bloomington.

19th District. John K. Wheeler, Cerro Gordo.

21st District. No election.

23rd District. N. F. Goodwin, Palestine.

25th District. Harry Wilson, Pinckneyville.

The *ex officio* directors are:

Superintendent of Public Instruction—F. G. Blair, Springfield.

Dean of the College of Agriculture—Eugene Davenport, Urbana.

Director State Department of Agriculture—B. M. Davison, Springfield.

President State Horticultural Society—F. H. Simpson, Flora.

President State Dairymen's Association—J. P. Mason, Elgin.

On motion, the election of directors was unanimously approved and the convention adjourned.

Respectfully submitted,

(Signed) H. E. Young, *Secretary of Convention.*

On motion the report was approved and ordered placed on file.

No other business appearing, the board adjourned and the new board convened, President Mann presiding.

Present: Directors, Barrett, Brown, Burroughs, E. W. Calhoun, Curtiss, Geweke, Gray, Haynes, Hopping, Mann, Mason, S. B. Pickett, Reed, Schilling, Simpson, Switzer, Tullock, Wheeler and Wilson.

On motion the election of officers was made the order of business.

The chairman appointed Directors Tullock and Pickett tellers, and the balloting proceeded, resulting in the election of the following officers:

President, Frank I. Mann.

Vice-President, Ralph Allen.

Secretary, H. E. Young.

Auditor-Treasurer, Clayton C. Pickett.

On motion Mrs. H. A. McKeene was reelected secretary of the Department of Household Science.

The secretary presented a report of the accredited delegates representing the 21st Congressional District in the convention at Monmouth, February 22, 1922, advising the Board of a tie vote on the Directorship, which result was reported to the convention with the recommendation that the matter be referred to the Board for consideration and action.

Director Haynes moved that Mr. Leigh Maxcy, of Farmingdale, Sangamon County, be elected to fill the vacancy of director in the 21st District, resulting from no election at the annual meeting, and in compliance with the recommendations of the delegates as expressed in its communication to the Board. Seconded and carried.

Director Haynes, as a member of a special committee with President Mann, reported that inasmuch as the Secretary of the Department of Household Science is also serving the State Department of Agriculture as Secretary of its State Fair School for Girls, and as this service involves a considerable amount of work which the Secretary should not be expected to handle without additional stenographic help, and as the officers and executive committee feel that this help should properly be supplied by the Department of Agriculture whose school is being served, the matter had been taken up with Director B. M. Davison, who assured the committee that he would willingly supply the Secretary with the services of a stenographer as needed, at any and all times, such assistance to be used by the Secretary as she may direct.

At the suggestion of the President, it was moved that the report of this special committee be approved, and made a part of the official record of the Board. Seconded and carried.

On motion, recess was taken until 1:15 P. M.

AFTERNOON SESSION.

The Board reconvened at the appointed hour, and the chairman announced that the hearing of the visiting delegations was the first order of business. Delegations from Belleville, Dixon, Lincoln and Paris presented invitations for entertaining the next annual meeting of the Institute. An invitation was also received from the University signed by President Kinley and Dean Davenport.

Director Tullock presented an invitation from Rockford to entertain the annual meeting of the State Institute in 1924, and Director Wheeler announced that Decatur is also desirous of the 1924 meeting.

Moved that the board proceed to ballot on the location of the next annual meeting, the first ballot being informal. Seconded and Carried.

The chairman appointed Directors Reed and Pickett tellers.

The result of the first formal ballot showed a majority vote in favor of Belleville, and on motion, duly made and seconded, Belleville was made the unanimous choice, providing that the facilities offered were found to be adequate.

Moved that the recommendations of the secretary to print several of the Monmouth addresses as bulletins prior to the annual report be referred to the executive committee for consideration and action. Seconded and carried.

Moved that the expenses of the committee of the Department of Household Science as appointed at Monmouth be taken care of from the Institute expense fund. Seconded and carried.

Director Brown suggested that more local speakers be used at the county institutes, and that the programs be planned so as the work may be linked up more closely with that of the Smith-Hughes high schools.

Director S. B. Mason suggested that institute speakers be taken to the schools wherever possible, and that both speakers and institute officers be urged to take advantage of the opportunities offered in this line.

Moved that the revision of the speakers list be referred to the executive committee, and that the directors advise the secretary of new speakers available for work. Seconded and carried.

Moved that the Secretary extend to Director Allen the sympathy of the Board and express to him its regret that he is unable to meet with the members at this time. Seconded and carried.

On motion the board adjourned.

Respectfully submitted,

H. E. YOUNG, *Secretary.*

MINUTES OF THE MEETING OF THE EXECUTIVE COMMITTEE HELD AT BELLEVILLE, JUNE 9, 1922.

Pursuant to the call of the president a meeting of the Executive Committee was held in Belleville, June 9, 1922.

Present: Directors Mann, Curtiss and Burroughs.

The committee inspected the facilities offered for the holding of the State Meeting in February and conferred with representatives of the Chamber of Commerce, County Farmers' Institute, and County Farm Bureau regarding detailed arrangements and program. The Lyric Theatre and the Elks Club Building were found to be centrally located and well equipped as meeting places for both the Institute and the Department of Household Science. The hotel facilities are not as commodious as desired but with the supply of available rooms in private homes which are promised will, in the opinion of the committee, serve the requirements of the meeting very well.

On motion duly made and carried, and as the results of its visit of inspection, the committee formally accepted Belleville as the location of the State Institute for 1923, Wednesday, Thursday and Friday, February 21, 22 and 23, being selected as the definite date for the event.

On motion this committee adjourned,

Respectfully submitted,

H. E. YOUNG, *Secretary.*

MINUTES OF THE MEETING OF THE BOARD OF DIRECTORS HELD AT THE UNIVERSITY OF ILLINOIS, URBANA, JUNE 14 AND 15, 1922.

On the invitation of the Dean of Agriculture and the Soils Committee, a meeting of the Board of Directors, was held at the College of Agriculture, University of Illinois, Urbana, Wednesday and Thursday, June 14th and 15th, 1922.

Present: Directors Barrett, Brown, Curtiss, Davenport, Gregory, Hoping, Mann, Mason, J. P. Mason, S. B. Pickett, Reed, Schilling, Simpson, Switzer, Tullock, and Wilson.

The members met at the Dean's office at 9 o'clock on the morning of the 14th, and attended the University Commencement Exercises in a body as the guests of President Kinley and officiated as the personal escort of Dr. Davenport, who delivered the Commencement address. The afternoon and the following day were devoted to an inspection of the University and the crop experiment fields, the animal husbandry and dairy departments, the horticultural grounds, and the various university and Experiment Station laboratories. These inspection tours were made under the guidance of the heads of the various departments, assisted by members of the teaching and experimental staffs, and proved intensely interesting and instructive to all. Every member present voiced his appreciation of the opportunity thus accorded the Board of seeing and studying the work of the College of Agriculture and Experiment Station, and were a unit in expressing their most

hearty thanks to Dean Davenport and the other University heads, department professors and assistants for their generous courtesies which made the meeting so extremely profitable.

While no formal session of the Board was convened at the meeting, it was unanimously voted to make it a matter of record.

Respectfully submitted,

H. E. YOUNG, *Secretary*.

AUDITOR'S REPORT.

To the Board of Directors of the Illinois Farmers' Institute.

GENTLEMEN: As your auditor, I beg leave to report that I have duly examined the claims of the parties named below; that I approve the same and recommend that warrants in payment of said vouchers be drawn for the following amounts:

Voucher No.	To whom.	For what.	Fund No.	Amount.
1	July Salaries	Office Help	1	\$726 66
2	August Salaries	Office help	1	726 66
3	Springfield Clean Towel Service....	Towel Supply	2	1 20
4	Hillier's Fireproof Transfer.....	Drayage	2	1 93
5	Western Union Telegraph Co.....	Telegraph Service	2	13 33
6	American Railway Express Co.....	Express Service	2	6 32
7	Fred P. Schlitt	Hooks	2	60
8	Merchants Transfer & Storage Co...	Drayage	2	1 80
9	Striffler Ice & Coal Co.....	Ice Supply	2	1 40
10	Central Union Telephone Co.....	Telephone Service	2	4 10
11	September Salaries	Office help	1	726 66
12	Western Union Telegraph Co.....	Telegraph Service	2	1 06
13	Springfield Clean Towel Service....	Towel Supply	2	1 20
14	R. H. Armbruster Co.....	Tent rent	2	20 50
15	Striffler Ice & Coal Co.....	Ice supply	2	1 40
16	Central Union Telephone Co.....	Telephone service	2	6 85
17	Geo. A. Switzer.....	Expenses as director.....	6	10 06
18	W. G. Curtiss.....	do.....	6	54 27
19	H. Clay Calhoun.....	do.....	6	26 89
20	C. V. Gregory.....	do.....	6	17 70
21	C. C. Pickett.....	do.....	6	24 71
22	H. E. Young.....	Secretary's expense	6	56 72
23	F. I. Mann.....	Expenses as director.....	6	40 85
24	October Salaries	Office help	1	726 66
25	Springfield Clean Towel Service....	Towel Supply	2	1 20
26	Western Union Telegraph Co.....	Telegraph service	2	2 86
27	Striffler Ice & Coal Co.....	Ice supply	2	1 75
28	Central Union Telephone Co.....	Telephone service	2	7 70
29	American Railway Express Co.....	Express service	2	1 96
30	James T. Powers.....	Faucet	2	3 50
31	Carleton Trimble	Speakers fee.....	5	10 00
32	Elizabeth McCormick Fund.....	do.....	5	10 00
33	A. N. Abbott.....	do.....	5	20 00
34	Wm. Webb	do.....	5	60 00
35	E. B. Landis.....	do.....	5	10 00
36	Walter Garvey	do.....	5	20 00
37	Mrs. F. I. Mann.....	do.....	5	40 00
38	Mrs. C. E. Moore.....	do.....	5	10 00
39	H. P. Irish.....	do.....	5	10 00
40	Clara Ingram Judson.....	do.....	5	50 00
41	Mrs. Grace Viall Gray.....	do.....	5	40 00
42	Margaret E. Brooks.....	do.....	5	70 00
43	D. T. Heimlich.....	do.....	5	70 00
44	Henry R. Rathbone.....	do.....	5	40 00
45	Clas. Palmer	do.....	5	50 00
46	C. C. Pervier.....	do.....	5	50 00
47	D. E. Hale.....	do.....	5	15 00
48	Samuel Crabtree	do.....	5	20 00
49	Dr. Eva M. Wilson.....	Expenses as H. S. officer.....	6	20 81
50	George F. Tullock.....	Expenses as director.....	6	18 74
51	Roy Naugle	Expenses Saline Co. Inst.....	7	75 00
52	John A. Love.....	Expenses Hardin Co. Inst.....	7	64 66
53	G. M. Nirider.....	Expenses Marion Co. Inst.....	7	75 00
54	November Salaries	Office help	1	726 66
55	Striffler Ice & Coal Co.....	Ice supply	2	1 40
56	Springfield Clean Towel Co.....	Towel supply	2	1 20
57	Western Union Telegraph Co.....	Telegraph service	2	5 91

AUDITOR'S REPORT—Continued.

Voucher No.	To whom.	For what.	Fund No.	Amount.
58	Central Union Telephone Co.	Telephone service	2	35 75
59	Meyer Electric Co.	Cord and sockets	2	1 75
59a	Wm. H. Conkling	Postage	2	200 00
60	Mrs. E. W. Burroughs	Speakers fee	5	50 00
61	Mrs. F. I. Mann	do.	5	120 00
62	Mrs. H. M. Dunlap	do.	5	80 00
63	A. C. Everingham	do.	5	240 00
64	Bert. L. Thomas	do.	5	10 00
65	Chas. Foss	do.	5	10 00
66	Elizabeth McCormick Fund	do.	5	10 00
67	Mrs. Grace Viall Gray	do.	5	50 00
68	R. B. Doan	do.	5	30 00
69	Chas. Taylor	do.	5	10 00
70	Julia Klein	do.	5	10 00
71	J. D. Waters	do.	5	10 00
72	Wm. Bone	do.	5	40 00
73	E. E. Pifer	do.	5	10 00
74	Mrs. C. E. Moore	do.	5	10 00
75	J. W. Stanton	do.	5	20 00
76	A. W. Brayton	do.	5	10 00
77	Edw. Schneider	do.	5	10 00
78	Carleton Trimble	do.	5	10 00
79	Clara Ingram Judson	do.	5	20 00
80	Francis D. Abbott	do.	5	10 00
81	J. B. Burrows	do.	5	10 00
82	C. A. Bracy	do.	5	10 00
83	Margaret E. Brooks	do.	5	90 00
84	Carl Baer	do.	5	10 00
85	C. C. Pervier	do.	5	80 00
86	D. T. Helmlich	do.	5	20 00
87	E. B. Landis	do.	5	30 00
88	H. A. Winter	do.	5	50 00
89	J. R. Lambert	do.	5	10 00
90	Mrs. W. J. Fulton	do.	5	30 00
91	Walter Rowe	do.	5	50 00
92	W. E. Holben	do.	5	50 00
93	Mrs. Lena Mann	Expenses as H. S. officer	6	10 70
94	Chas. Foss	Expenses as speaker	6	14 24
95	J. B. Burrows	Expenses as director	6	18 94
96	R. O. Clarida	Expenses as speaker	6	13 67
97	Otto Rheinhardt	Expenses Pike Co. Inst.	7	59 03
98	H. W. Holifield	Expenses Massac Co. Inst.	7	75 00
99	Chas. Noble	Expenses Johnson Co. Inst.	7	75 00
100	Frank W. Keith	Expenses Perry Co. Inst.	7	75 00
101	I. N. Forte	Expenses Crawford Co. Inst.	7	75 00
102	F. W. Reitz	Expenses Clay Co. Inst.	7	75 00
103	James Doherty	Expenses Gallatin Co. Inst.	7	60 90
104	Edgar Riley	Expenses Coles Co. Inst.	7	69 77
105	R. B. Endicott	Expenses Pulaski Co. Inst.	7	75 00
106	Ethel Kimmel	Expenses Williamson Co. Inst.	7	75 00
107	C. F. Worner	Expenses Mason Co. Inst.	7	75 00
108	Ed. H. Bowen	Expenses Hamilton Co. Inst.	7	67 47
109	D. M. Markhill	Expenses Franklin Co. Inst.	7	75 00
110	C. L. Hawkins	Expenses Adams Co. Inst.	7	75 00
111	J. Logan Unland	Expenses Tazewell Co. Inst.	7	75 00
112	L. A. Gowdy	Expenses White Co. Inst.	7	75 00
113	C. A. Griffith	Expenses Fayette Co. Inst.	7	75 00
114	December Salaries	Office help	1	726 66
115	Springfield Clean Towel Service	Towel supply	2	1 20
116	Striffler Ice & Coal Co.	Ice supply	2	1 05
117	Western Union Telegraph Co.	Telegraph service	2	4 18
119	Central Union Telephone Co.	Telephone service	2	12 10
119	J. B. Burrows	Speakers fee	5	10 00
120	Mrs. Mary S. Boal	do.	5	40 00
121	Mrs. J. M. Daniels	do.	5	90 00
122	O. M. McGhee	do.	5	10 00
123	H. P. Irish	do.	5	30 00
124	H. H. Bailey	do.	5	120 00
125	Mrs. C. E. Moore	do.	5	10 00
126	J. P. Mason	do.	5	100 00
127	Margaret E. Brooks	do.	5	20 00
128	E. B. Landis	do.	5	20 00
129	Wm. Webb	do.	5	20 00
130	Dr. Eva M. Wilson	do.	5	130 00
131	L. A. Richardson	do.	5	60 00
132	Carleton Trimble	do.	5	10 00
133	Mrs. Geo. Meyer	do.	5	10 00
134	Mrs. Rufus Beard	do.	5	20 00

AUDITOR'S REPORT—Continued.

Voucher No.	To whom.	For what.	Fund No.	Amount.
135	H. B. Piper.....	Speakers fee	5	10 00
136	Merchants' Transfer Co.....	Moving	2	75
137	Wm. H. Smith.....	Packing books	2	48 75
138	Geo. W. Hudson.....	Rubber stamp	2	50
139	Wm. H. Conkling.....	Postage	2	200 00
140	Mrs. H. A. McKeene.....	H. S. Secretary's expense.....	6	48 32
141	J. B. Burrows.....	Expenses as director.....	6	24 26
142	J. P. Mason.....	do.....	6	22 59
143	Mary S. Boal.....	Expenses as speaker.....	6	4 25
144	Mrs. H. A. McKeene.....	H. S. Secretary's expense.....	6	10 72
145	R. E. Muckelroy.....	Expenses as director.....	6	57 48
146	H. E. Young.....	Secretary's expense.....	6	27 16
147	Frank S. Haynes.....	Expenses as director.....	6	21 70
148	J. L. Miller.....	Expenses Jackson Co. Inst.....	7	44 35
148	Ralph Newell.....	Expenses Cass Co. Inst.....	7	75 00
148	R. L. Eymann.....	Expenses Jersey Co. Inst.....	7	75 00
148	Wm. Byrnes.....	Expenses Peoria Co. Inst.....	7	75 00
148	Roy Edmiston.....	Expenses Randolph Co. Inst.....	7	75 00
148	Leander Wooden.....	Expenses Jefferson Co. Inst.....	7	75 00
148	Mrs. J. A. Worthington.....	Expenses Union Co. Inst.....	7	60 64
148	James Manley.....	Expenses Wabash Co. Inst.....	7	75 00
148	M. C. Jones.....	Expenses Douglas Co. Inst.....	7	75 00
148	Clayton C. Pickett.....	Expenses Cook Co. Inst.....	7	73 34
148	Henry Shew.....	Expenses Jasper Co. Inst.....	7	37 71
148	Fred A. Long.....	Expenses Hardin Co. Inst.....	7	75 00
148	G. A. Lazier.....	Expenses Ogle Co. Inst.....	7	75 00
148	F. V. Wilson.....	Expenses Effingham Co. Inst.....	7	75 00
148	Elmer G. Vortman.....	Expenses Scott Co. Inst.....	7	75 00
149	Striffer Ice & Coal Co.....	Ice supply	2	1 75
150	Western Union Telegraph Co.....	Telegraph service	2	1 65
151	Illinois Bell Telephone Co.....	Telephone service	2	14 35
152	Wm. H. Conkling.....	Postage	2	150 00
153	Elizabeth McCormick Fund.....	Speakers fee.....	5	40 00
154	Samuel Crabtree.....	do.....	5	30 00
155	A. C. Everingham.....	do.....	5	110 00
156	C. C. Pervier.....	do.....	5	90 00
157	J. B. Burrows.....	do.....	5	10 00
158	H. C. McCarrel.....	do.....	5	160 00
159	Mrs. W. J. Fulton.....	do.....	5	40 00
160	Grace Viall Gray.....	do.....	5	50 00
161	Margaret E. Brooks.....	do.....	5	30 00
162	H. A. Winter.....	do.....	5	60 00
163	F. I. Mann.....	do.....	5	120 00
164	Wm. Osburn.....	do.....	5	20 00
165	Springfield Clean Towel Service.....	Towel supply	2	1 20
166	L. C. Brown.....	Speakers fee.....	5	20 00
167	Leigh Maxey.....	do.....	5	20 00
168	Ralph Allen.....	do.....	5	10 00
169	E. A. White.....	do.....	5	30 00
170	I. W. Dickerson.....	do.....	5	40 00
171	Walter Rowe.....	do.....	5	20 00
172	Mrs. Alma Giles.....	do.....	5	10 00
173	W. E. Holben.....	do.....	5	30 00
174	A. W. Brayton.....	do.....	5	20 00
175	Mrs. Samuel E. Bradt.....	Expenses as H. S. officer.....	6	10 55
176	Geo. A. Switzer.....	Expenses as director.....	6	15 92
177	F. I. Mann.....	do.....	6	15 01
178	O. L. Wakefield.....	do.....	6	25 22
179	D. M. Marlin.....	do.....	6	49 84
180	Ralph Allen.....	do.....	6	53 84
181	Eva M. Wilson.....	do.....	6	10 75
182	J. H. Rainey.....	Expenses Montgomery Co. Inst.....	7	75 00
182	W. G. Jones.....	Expenses McDonough Co. Inst.....	7	75 00
182	Morton E. Thomas.....	Expenses Greene Co. Inst.....	7	70 89
182	Carl J. Hacker.....	Expenses Pope Co. Inst.....	7	75 00
182	O. W. Neher.....	Expenses Lee Co. Inst.....	7	75 00
182	R. B. Grissom.....	Expenses Cumberland Co. Inst.....	7	75 00
182	Jones Tontz.....	Expenses Marshall Co. Inst.....	7	75 00
182	Geo. B. Herrick.....	Expenses Shelby Co. Inst.....	7	74 03
182	Harry Hall.....	Expenses Schuyler Co. Inst.....	7	75 00
182	Ora I. Miller.....	Expenses Wayne Co. Inst.....	7	75 00
182	H. B. Piper.....	Expenses Richland Co. Inst.....	7	75 00
182	Phil Richards.....	Expenses Hancock Co. Inst.....	7	75 00
182	John Schroeder.....	Expenses Iroquois Co. Inst.....	7	75 00
183	January Salaries.....	Office help	1	736 66
184	W. E. Holben.....	Expenses as director.....	6	14 15
185	Alma G. H. Giles.....	do.....	6	4 60
186	H. E. Young.....	Secretary's expense	6	48 32

AUDITOR'S REPORT—Continued.

Voucher No.	To whom.	For what.	Fund No.	Amount.
187	February Salaries	Office help.....	1	696 66
188	Addressograph Co.	Addressograph ribbon	2	75
189	American Railway Express Co.	Express	2	2 71
190	Wm. H. Conkling.....	Postage	2	200 00
191	Illinois Bell Telephone Co.	Telephone service	2	23 00
192	Macpherson & Edward.....	Badge ribbon	2	4 05
193	Wm. Riley	Packing books	2	30 00
194	Springfield Clean Towel Service.....	Towel supply	2	1 20
195	Striffler Ice & Coal Co.	Ice supply	2	1 40
196	Western Union Telegraph Co.	Telegraph service	2	5 47
197	U. H. Bailey.....	Speakers fee.....	5	30 00
198	Mary S. Boal.....	do.....	5	80 00
199	A. W. Brayton.....	do.....	5	10 00
200	Margaret E. Brooks.....	do.....	5	110 00
201	L. C. Brown.....	do.....	5	40 00
202	Dr. W. W. Diehl.....	do.....	5	20 00
203	R. B. Doan.....	do.....	5	10 00
204	Mrs. H. M. Dunlap.....	do.....	5	80 00
205	H. M. Dunlap.....	do.....	5	10 00
206	A. C. Everingham.....	do.....	5	220 00
207	Charles Farr.....	do.....	5	10 00
208	Elizabeth McCormick Fund.....	do.....	5	50 00
209	Mrs. W. J. Fulton.....	do.....	5	110 00
210	Alma G. H. Giles.....	do.....	5	10 00
211	Grace Viall Gray.....	do.....	5	150 00
212	Dwight E. Hale.....	do.....	5	15 00
213	D. T. Helmlich.....	do.....	5	70 00
214	Clara Ingram Judson.....	do.....	5	20 00
215	Mrs. J. L. Murray.....	do.....	5	180 00
216	Wm. Osburn.....	do.....	5	52 50
217	Charles E. Palmer.....	do.....	5	30 00
218	Clayton C. Pervier.....	do.....	5	210 00
219	Henry R. Rathbone.....	do.....	5	70 00
220	Burton R. Rogers.....	do.....	5	30 00
221	Mrs. C. W. Sewell.....	do.....	5	20 00
222	Bert L. Thomas.....	do.....	5	10 00
223	Eva M. Wilson.....	do.....	5	210 00
224	H. A. Winter.....	do.....	5	110 00
225	O. J. Leimbach.....	Expenses Boone Co. Inst.....	7	75 00
225	J. Ray Stanner.....	Expenses Champaign Co. Inst.....	7	75 00
225	John G. Hill.....	Expenses Christian Co. Inst.....	7	75 00
225	P. L. Kelly.....	Expenses Clark Co. Inst.....	7	75 00
225	J. H. Huelsmann.....	Expenses Clinton Co. Inst.....	7	75 00
225	Irwin Thorp.....	Expenses DeWitt Co. Inst.....	7	75 00
225	Joseph S. Boo.....	Expenses Fulton Co. Inst.....	7	75 00
225	P. A. Peterson.....	Expenses Grundy Co. Inst.....	7	75 00
225	J. P. Carson.....	Expenses JoDaviess Co. Inst.....	7	75 00
225	Frank Peck.....	Expenses Kane Co. Inst.....	7	75 00
225	E. P. Bacon.....	Expenses Lake Co. Inst.....	7	75 00
225	H. M. Zater.....	Expenses Logan Co. Inst.....	7	75 00
225	H. W. Phillips.....	Expenses Macon Co. Inst.....	7	75 00
225	C. H. Ocock.....	Expenses McHenry Co. Inst.....	7	75 00
225	C. E. Hill.....	Expenses McLean Co. Inst.....	7	75 00
225	W. P. Wright.....	Expenses Moultrie Co. Inst.....	7	75 00
225	James E. Caldwell.....	Expenses Sangamon Co. Inst.....	7	75 00
225	H. B. Thurston.....	Expenses Stark Co. Inst.....	7	75 00
225	J. H. Checkley.....	Expenses Vermilion Co. Inst.....	7	75 00
225	J. H. Martin.....	Expenses Whiteside Co. Inst.....	7	75 00
225	Fay Steward.....	Expenses Winnebago Co. Inst.....	7	75 00
226	Eva M. Wilson.....	Expenses as H. S. Officer.....	6	53 13
227	H. C. McCarrel.....	Expenses as speaker.....	6	22 50
228	Frank S. Haynes.....	Expenses as director.....	6	31 28
229	John S. Fleming.....	Expenses State meeting.....	6	25 26
230	E. W. Burroughs.....	Expenses as director.....	6	35 37
231	E. Wright Allen.....	Expenses State meeting.....	6	16 99
232	Carl J. Baer.....	do.....	6	18 89
233	Mary L. Langworthy.....	do.....	6	18 53
234	Mrs. H. A. McKeene.....	H. S. Secretary's expense.....	6	30 63
235	L. C. Brown.....	Expenses as director.....	6	18 99
236	Margia B. Haugh.....	Expenses State meeting.....	6	18 73
237	H. E. Young.....	Secretary's expense.....	6	28 85
238	March Salaries	Office help.....	1	696 66
239	Wm. H. Conkling.....	Postage	2	200 00
240	Illinois Bell Telephone Co.	Telephone service	2	47 20
241	Springfield Clean Towel Service.....	Towel supply	2	1 20
242	Striffler Ice & Coal Co.	Ice supply	2	1 40
243	Western Union Telegraph Co.	Telegraph service	2	4 36
244	R. F. Herndon.....	Badge ribbon	2	1 35

AUDITOR'S REPORT—Continued.

Voucher No.	To whom.	For what.	Fund No.	Amount.
245	Chas. Farr	Speakers fee	5	40 00
246	Mrs. Elizabeth Gumm	do	5	40 00
247	Mrs. Bertha Harris	do	5	110 00
248	C. C. Logan	do	5	10 00
249	Wm. Osburn	do	5	50 00
250	Dr. Lena K. Sadler	do	5	10 00
251	Wm. Webb	do	5	70 00
252	Earl W. Mounts	Expenses Bureau Co. Inst.	7	75 00
252	Oliver Bulond	Expenses Livingston Co. Inst.	7	75 00
252	L. S. Dorsey	Expenses Madison Co. Inst.	7	75 00
252	J. W. Hall	Expenses Macoupin Co. Inst.	7	74 63
252	J. K. Kincaid	Expenses Menard Co. Inst.	7	75 00
252	E. R. Hembrough	Expenses Morgan Co. Inst.	7	75 00
252	Fred Mitchell	Expenses St. Clair Co. Inst.	7	75 00
252	L. F. Ochs	Expenses Washington Co. Inst.	7	75 00
253	Mrs. Geo. Arbeiter	Speakers fee	6	10 00
254	Carl J. Baer	do	6	25 00
255	H. H. Bailey	do	6	10 00
256	Lura Bartholomew	do	6	10 00
257	Mary S. Boal	do	6	10 00
258	W. A. Cochel	do	6	25 00
259	John S. Collier	do	6	10 00
260	Mrs. H. M. Dunlap	do	6	20 00
261	Joe Fulkerson	do	6	10 00
262	Ray Gardner	do	6	10 00
263	Alma Halbower Giles	do	6	10 00
264	F. A. Gougler	do	6	10 00
265	Grace Viall Gray	do	6	10 00
266	Mrs. Maude C. Hessler	do	6	10 00
267	James R. Holbert	do	6	10 00
268	Clara Ingram Judson	do	6	50 00
269	H. H. Kildee	do	6	25 00
270	Mary Langworthy	do	6	15 00
271	Mrs. Lena S. Mann	do	6	10 00
272	J. C. Meis	do	6	10 00
273	Bertha H. Miner	do	6	10 00
274	J. S. Montgomery	do	6	25 00
275	M. L. Mosher	do	6	10 00
276	Carl Vrooman	do	6	25 00
277	Eva M. Wilson	do	6	10 00
278	A. N. Abbott	Expenses as director	6	14 22
279	Mrs. Geo. Arbeiter	Expenses State meeting	6	18 67
280	H. H. Bailey	do	6	22 28
281	Lura Bartholomew	do	6	18 92
282	Mary S. Boal	do	6	20 22
283	L. C. Brown	Expenses as director	6	17 68
284	Emma C. Burroughs	Expenses State meeting	6	23 31
285	E. W. Burroughs	Expenses as director	6	26 74
286	J. B. Burroughs	do	6	5 48
287	H. Clay Calhoun	do	6	50 22
288	John S. Collier	Expenses State meeting	6	26 36
289	W. G. Curtiss	Expenses as director	6	81 43
290	E. Davenport	Expenses State meeting	6	19 32
291	Mrs. H. M. Dunlap	do	6	22 03
292	A. Geweke	Expenses as director	6	40 37
293	Alma Halbower Giles	Expenses State meeting	6	8 62
294	F. A. Gougler	do	6	10 72
295	Grace Viall Gray	do	6	17 50
296	Charles Gray	Expenses as director	6	43 97
297	F. S. Haynes	do	6	41 67
298	W. E. Holben	do	6	22 77
299	J. R. Holbert	Expenses State meeting	6	10 06
300	G. G. Hopping	Expenses as director	6	31 19
301	Clara Ingram Judson	Expenses State meeting	6	22 75
302	H. H. Kildee	do	6	22 19
303	W. R. Matheny	do	6	20 30
304	Inez M. Miner	do	6	8 59
305	Bertha M. Miner	do	6	14 07
306	J. S. Montgomery	do	6	49 58
307	M. L. Mosher	do	6	7 82
308	Mrs. J. L. Murray	do	6	14 95
309	Clayton C. Pickett	Expenses as director	6	52 80
310	Ira B. Reed	do	6	17 86
311	F. H. Simpson	Expenses State meeting	6	13 15
312	G. A. Switzer	Expenses as director	6	33 94
313	Geo. F. Tullock	do	6	53 05
314	O. L. Wakefield	Expenses State meeting	6	47 12
315	Wm. Webb	do	6	18 50

AUDITOR'S REPORT—Continued.

Voucher No.	To whom.	For what.	Fund No.	Amount.
316	V. J. Shack.....	Expenses State meeting.....	6	28 70
317	Mrs. W. C. Rife.....	do.....	6	32 24
318	Helen Kaylor.....	do.....	6	28 75
319	Ruth A. Wardall.....	do.....	6	21 16
320	Mrs. J. E. Kirkpatrick.....	Expenses district conference.....	6	9 13
321	C. W. Cooper.....	do.....	6	2 56
322	Elizabeth Talbot.....	do.....	6	5 80
323	Phil Richards.....	do.....	6	5 45
324	Earl W. Poland.....	do.....	6	5 83
325	J. H. Paxton.....	do.....	6	6 35
326	C. L. Hawkins.....	do.....	6	6 31
327	E. R. Kunkle.....	do.....	6	3 30
328	Mrs. E. L. Hall.....	do.....	6	7 46
329	Walter A. Moore.....	do.....	6	7 51
330	Harry E. Hall.....	do.....	6	7 51
331	Mrs. M. R. Staggs.....	do.....	6	2 08
332	Mrs. J. E. Mummert.....	do.....	6	5 33
333	W. G. Jones.....	do.....	6	4 08
334	J. W. Whisenand.....	do.....	6	3 61
335	Mrs. W. H. Clarke.....	do.....	6	3 16
336	Ralph Wells.....	do.....	6	1 84
337	Mrs. Revy Zimmerman.....	do.....	6	4 70
338	Mrs. R. C. Doneghue.....	do.....	6	4 18
339	Ralph D. Kyle.....	do.....	6	1 74
340	Mrs. Winifred Wells.....	do.....	6	1 84
341	Mrs. Timothy Moore.....	do.....	6	7 61
342	P. S. Richey.....	do.....	6	1 84
343	Lyle C. Bridgford.....	do.....	6	1 84
344	F. M. Bane.....	do.....	6	2 88
345	Earl Mount.....	do.....	6	7 90
346	L. W. Hacker.....	do.....	6	4 71
347	C. A. Johnson.....	do.....	6	4 71
348	Ferris Rowcliff.....	do.....	6	3 16
349	Mrs. Chester Peake.....	do.....	6	3 19
350	Chris Christenson.....	do.....	6	3 63
351	Jones Tontz.....	do.....	6	4 00
352	R. L. Steiger.....	do.....	6	3 19
353	Albert R. Sabin.....	do.....	6	3 19
354	W. W. Wilson.....	do.....	6	2 83
355	Inez M. Rice.....	do.....	6	2 16
356	G. C. Baker.....	do.....	6	4 89
357	Mrs. E. Mount.....	do.....	6	7 90
358	Mrs. H. A. McKeene.....	do.....	6	22 97
359	H. E. Young.....	Secretary's expense.....	6	40 90
360	Wm. Corris.....	Reporting.....	3	683 90
361	April Salaries.....	Office help.....	1	696 66
362	American Railway Express Co.....	Express.....	2	2 25
363	American Multigraph Co.....	Multigraph supplies.....	2	100 00
364	Barker's Art Store.....	Picture framing.....	2	3 75
365	Capital Electric Co.....	Supplies.....	2	1 70
366	Illinois Bell Telephone Co.....	Telephone service.....	2	4 60
367	Springfield Clean Towel Service.....	Towel supply.....	2	1 20
368	Striffler Ice & Coal Co.....	Ice supply.....	2	1 75
369	Underwood Typewriter Co.....	Typewriter repairs.....	2	1 50
370	Western Union Telegraph Co.....	Telegraph service.....	2	3 27
371	Wm. A. Bone.....	Speakers fee.....	5	10 00
372	Dr. Delia Caldwell.....	do.....	5	60 00
373	Sam W. Crabtree.....	do.....	5	40 00
374	Mrs. H. G. Easterly.....	do.....	5	30 00
375	Ralph French.....	do.....	5	50 00
376	Grace Viall Gray.....	do.....	5	10 00
377	H. B. Green.....	do.....	5	30 00
378	J. D. Kruwel.....	do.....	5	10 00
379	Lena S. Mann.....	do.....	5	140 00
380	F. I. Mann.....	do.....	5	170 00
381	H. C. McCarrel.....	do.....	5	70 00
382	W. E. Riegel.....	do.....	5	120 00
383	Dr. Eva M. Wilson.....	do.....	5	10 00
384	Harvey W. Byrnes.....	Expenses Brown Co. Inst.....	7	47 96
384	J. M. Daniels.....	Expenses Bond Co. Inst.....	7	75 00
384	W. C. Pool.....	Expenses Ford Co. Inst.....	7	75 00
384	Wm. Bossert.....	Expenses Kankakee Co. Inst.....	7	75 00
384	J. H. Swanzey.....	Expenses Stephenson Co. Inst.....	7	75 00
385	Mrs. J. Collins Goodrich.....	Expense district conference.....	6	2 80
386	B. L. Thomas.....	do.....	6	5 20
387	Harriet J. Francis.....	do.....	6	3 76
389	C. J. Luther.....	do.....	6	4 96
390	August Maue.....	do.....	6	3 76

AUDITOR'S REPORT—Continued.

Voucher No.	To whom.	For what.	Fund No.	Amount.
391	Lewis V. Morgan.....	Expense district conference.....	6	2 80
392	A. M. Shelton.....	do.....	6	3 06
394	A. M. Fitchie.....	do.....	6	3 74
395	Webb N. Gould.....	do.....	6	3 20
396	E. M. Harris.....	do.....	6	3 20
397	Margaret A. Davis.....	do.....	6	2 70
398	G. R. White.....	do.....	6	2 95
399	D. H. Minto.....	do.....	6	2 95
400	Mrs. Vida T. Henry.....	do.....	6	2 35
401	C. J. Leinbach.....	do.....	6	7 14
402	Elizabeth B. Howey.....	do.....	6	7 14
403	Mrs. Arthur J. VanEpps.....	do.....	6	7 14
404	Mrs. R. E. Moss.....	do.....	6	7 14
405	James Gough.....	do.....	6	6 74
406	Mrs. David F. Hipple.....	do.....	6	4 05
407	J. G. Matlock.....	do.....	6	4 95
408	Carl Vrooman.....	Expenses State meeting.....	6	10 47
409	N. F. Goodwin.....	Expenses as director.....	6	19 28
410	Eli I. Crosier.....	Expenses district conference.....	6	7 80
411	W. R. Foster.....	do.....	6	7 30
412	Mrs. Chas. S. Robinson.....	do.....	6	8 16
413	Ira B. Reed.....	do.....	6	1 15
414	Mrs. F. D. Murphy.....	do.....	6	4 48
415	W. G. Curtiss.....	do.....	6	4 98
416	Arnold F. Karsk.....	do.....	6	1 44
417	J. H. Swanzey.....	do.....	6	2 23
418	Mrs. Jesse Colehour.....	do.....	6	2 71
419	C. E. Bickelhaupt.....	do.....	6	2 71
420	G. R. Bliss.....	do.....	6	2 71
421	Mrs. J. H. Martin.....	do.....	6	5 48
422	H. B. Price.....	do.....	6	5 23
423	Edward Devine.....	do.....	6	3 35
424	Nellie Cahil.....	do.....	6	4 69
425	Mrs. C. C. Ackert.....	do.....	6	3 35
426	Mrs. Dexter Stocking.....	do.....	6	4 07
427	G. A. Lazier.....	do.....	6	4 07
428	Mrs. J. A. Ross.....	do.....	6	4 07
429	Dexter Stocking.....	do.....	6	4 07
430	E. R. Buck.....	do.....	6	4 20
431	O. W. Neher.....	do.....	6	4 20
432	Mrs. Belle Walsh.....	do.....	6	4 86
433	W. Floyd Keepers.....	do.....	6	5 16
434	Clara A. Harford.....	do.....	6	6 62
435	Wm. S. Lutzow.....	do.....	6	3 81
436	R. W. Carper.....	do.....	6	3 86
437	Geo. F. Tullock.....	do.....	6	3 68
438	Charles H. Keltner.....	do.....	6	6 86
439	F. L. Steward.....	do.....	6	7 11
440	Clinton T. Glenny.....	do.....	6	7 11
441	Mrs. Will Geddis.....	do.....	6	8 15
442	A. N. Barron.....	do.....	6	5 45
443	George Elliott.....	do.....	6	4 95
444	Mabel R. Matlock.....	do.....	6	4 95
445	Mrs. W. M. Beattie.....	do.....	6	6 52
446	W. M. Beattie.....	do.....	6	6 52
447	Robert H. Clanahan.....	do.....	6	10 92
448	Frank S. Haynes.....	do.....	6	15 15
449	C. W. Simpson.....	do.....	6	6 31
450	Elizabeth Gumm.....	do.....	6	9 77
451	Mrs. Robert H. Clanahan.....	do.....	6	10 42
452	Mrs. W. C. Rife.....	do.....	6	4 14
453	M. M. Hartman.....	do.....	6	4 15
454	Lena Phillips.....	do.....	6	4 30
455	Mrs. S. W. Jones.....	do.....	6	4 30
456	S. W. Jones.....	do.....	6	4 30
457	May S. Hawkins.....	do.....	6	4 43
458	Asa D. Twente.....	do.....	6	5 12
459	Roy Edmiston.....	do.....	6	4 39
460	Robert B. Templeton.....	do.....	6	3 51
461	Etta Root Edwards.....	do.....	6	3 01
462	G. W. Childers.....	do.....	6	2 25
463	J. H. Krumrey.....	do.....	6	2 25
464	W. K. Galeener.....	do.....	6	2 50
465	O. G. Broleman.....	do.....	6	3 05
466	Mrs. J. A. Worthington.....	do.....	6	2 60
467	Mrs. R. A. Carlile.....	do.....	6	2 60
468	George Barringer.....	do.....	6	3 00
469	J. J. Doerschuk.....	do.....	6	2 80

AUDITOR'S REPORT—Continued.

Voucher No.	To whom.	For what.	Fund No.	Amount.
470	L. E. Stoutenberg.....	Expense district conference.....	6	9 44
471	Harry Luse.....	do.....	6	8 60
472	Carl J. Hacker.....	do.....	6	11 86
473	John Norris.....	do.....	6	4 75
474	Mrs. Hubert Harrison.....	do.....	6	9 31
475	D. M. Marlin.....	do.....	6	9 14
476	Mrs. Catharine Middeke.....	do.....	6	6 91
477	M. L. Lansford.....	do.....	6	4 94
478	Mrs. Charles B. Rohrbough.....	do.....	6	3 72
479	Joseph Oldfield.....	do.....	6	2 95
480	Edw. Harpstrite.....	do.....	6	3 15
481	Mrs. T. M. Smith.....	do.....	6	3 72
482	Mrs. J. M. Carmean.....	do.....	6	3 72
483	J. Lem Balance.....	do.....	6	3 72
484	Clara E. Laird.....	do.....	6	2 46
485	Mrs. W. D. Green.....	do.....	6	1 28
486	Leander Wooden.....	do.....	6	1 62
487	T. J. Holstlare.....	do.....	6	2 03
488	Ida M. Kile.....	do.....	6	2 95
489	F. O. Grissom.....	do.....	6	3 72
490	F. V. Wilson.....	do.....	6	5 89
491	J. W. Davis.....	do.....	6	5 34
492	J. E. Whitchurch.....	do.....	6	75
493	Roy R. Naugle.....	do.....	6	1 23
494	J. A. Silliman.....	do.....	6	3 46
495	John Marlman.....	do.....	6	4 10
496	Arvilla Shain Smith.....	do.....	6	6 00
497	G. W. Corbin.....	do.....	6	2 38
498	O. W. Hoit.....	do.....	6	15 21
499	Maud C. Hessler.....	do.....	6	5 02
500	Chas. F. Hottes.....	do.....	6	13 98
501	J. R. Fulkerson.....	do.....	6	20 39
502	J. C. Meis.....	do.....	6	14 30
503	F. I. Mann.....	do.....	6	44 96
504	Jno. A. Love.....	do.....	6	2 58
505	O. M. McGhee.....	do.....	6	4 10
506	Mrs. Ora I. Miller.....	do.....	6	7 23
507	Marshall C. Smith.....	do.....	6	7 23
508	G. G. Hopping.....	do.....	6	16 29
509	Frances A. Jordan.....	do.....	6	3 67
510	Ed. Creighton.....	do.....	6	4 13
511	A. J. Tison.....	do.....	6	1 23
512	John Lamb, Jr.....	do.....	6	2 38
513	J. H. Lockhart.....	do.....	6	6 20
514	Mrs. A. J. Leeper.....	do.....	6	1 84
515	W. C. Pool.....	do.....	6	4 83
516	G. C. Williams.....	do.....	6	4 19
517	S. L. Grove.....	do.....	6	1 40
518	O. R. Turney.....	do.....	6	1 40
519	Chas. H. Watts.....	do.....	6	3 79
520	J. E. Johnson.....	do.....	6	3 79
521	J. W. Watson.....	do.....	6	2 36
522	Mrs. Karl Hoover.....	do.....	6	1 40
523	Mrs. Geo. H. Styan.....	do.....	6	1 40
524	Miss Rose Boyer.....	do.....	6	1 40
525	Frank Hersman.....	do.....	6	3 08
526	Mrs. F. W. Ticken.....	do.....	6	4 90
527	Robert Wortham.....	do.....	6	4 00
528	Orion B. Goble.....	do.....	6	4 74
529	Homer Freeland.....	do.....	6	2 25
530	Mrs. A. Linn Baer.....	do.....	6	50
531	Wm. Bossert.....	do.....	6	9 73
532	John O. Honnold.....	do.....	6	7 58
533	Ray Pierce.....	do.....	6	4 78
534	H. Zeis Gumm.....	do.....	6	8 46
535	Mrs. Lena S. Mann.....	do.....	6	20 86
536	D. A. Smith.....	do.....	6	3 80
537	Mrs. Geo. Eastburn.....	do.....	6	5 78
538	Louis K. Voris.....	do.....	6	7 43
539	Adam Imle.....	do.....	6	9 80
540	P. L. Kelley.....	do.....	6	9 40
541	Mrs. John A. Ryan.....	do.....	6	8 48
542	L. C. Markwell.....	do.....	6	7 68
543	F. R. McCandlish.....	do.....	6	8 03
544	John T. Green.....	do.....	6	3 00
545	H. J. Meis.....	do.....	6	3 00
546	Mrs. J. P. Green.....	do.....	6	3 00
547	J. Ira Powell.....	do.....	6	2 80

AUDITOR'S REPORT—Continued.

Voucher No.	To whom.	For what.	Fund No.	Amount.
548	Wm. O. Crain.....	Expense district conference.....	6	2 66
549	Mrs. Chas. Colburn.....	do.....	6	3 02
550	Matt Minder.....	do.....	6	2 80
551	J. H. Checkley.....	do.....	6	5 86
552	Bernhard Wright.....	do.....	6	5 48
553	Susanna Coombe.....	do.....	6	2 99
554	Chas. McDonald.....	do.....	6	4 31
555	Chas. M. Weller.....	do.....	6	4 31
556	Mrs. Letha Killam.....	do.....	6	7 00
557	Helen Moffett.....	do.....	6	4 66
558	Guy L. Kellar.....	do.....	6	2 26
559	C. H. Grady.....	do.....	6	1 84
560	H. B. Austin.....	do.....	6	2 83
561	J. F. Sanmann.....	do.....	6	6 64
562	Geo. H. Vannier.....	do.....	6	2 03
563	Aubrey E. Davidson.....	do.....	6	4 12
564	C. W. Houghton.....	do.....	6	2 68
565	Mrs. Cora Banskoter.....	do.....	6	3 64
566	Geo. H. Wiemer.....	do.....	6	7 14
567	C. T. Keeley.....	do.....	6	6 04
568	V. P. Lame.....	do.....	6	3 54
569	C. A. Hughes.....	do.....	6	2 78
570	Mrs. W. M. Roes.....	do.....	6	1 65
571	Mrs. W. Y. Baker.....	do.....	6	4 37
572	H. C. McCarrel.....	do.....	6	8 26
573	Elmer G. Vortman.....	do.....	6	2 03
574	Mrs. Henry Knoepfel.....	do.....	6	2 03
575	C. L. Whitlock.....	do.....	6	7 49
576	E. A. Lewey.....	do.....	6	5 84
577	Frank R. Edwards.....	do.....	6	1 41
578	James E. Caldwell.....	do.....	6	1 55
579	R. R. Ifills.....	do.....	6	4 20
580	Mrs. E. L. Yockey.....	do.....	6	3 42
581	Mrs. A. J. Rucker.....	do.....	6	3 42
582	Mrs. Grace E. Hay.....	do.....	6	3 42
583	Clotilde Harrison.....	do.....	6	3 42
584	R. W. Dickenson.....	do.....	6	3 88
585	Mrs. Jno. M. Hampton.....	do.....	6	12 14
586	J. P. Mason.....	do.....	6	39 56
587	Mrs. Stella S. Baker.....	do.....	6	2 83
588	Mrs. C. A. Dodds.....	do.....	6	1 75
589	J. H. Rainey.....	do.....	6	8 72
590	I. D. Snedeker.....	do.....	6	6 22
591	Florence S. Warren.....	do.....	6	6 47
592	R. L. Eyman.....	do.....	6	6 22
593	L. E. Groppe.....	do.....	6	6 22
594	Eva M. Wilson.....	Expenses H. S. Officer.....	6	40 26
595	S. B. Mason.....	Expenses as director.....	6	63 26
596	Mrs. H. A. McKeene.....	H. S. Secretary's expense.....	6	110 96
597	H. E. Young.....	Secretary's expense.....	6	104 14
598	Kerns-Baker, Inc.....	Steel files.....	4	348 38
599	May Salaries.....	Office help.....	1	696 66
600	American Multigraph Co.....	Multigraph repairs.....	2	100 00
601	Wm. H. Conkling.....	Postage.....	2	150 00
602	Illinois Bell Telephone Co.....	Telephone service.....	2	3 40
603	Fred P. Schlitt.....	Hardware supplies.....	2	2 68
604	Springfield, Clean Towel Service.....	Towel supply.....	2	1 20
605	Striffler Ice & Coal Co.....	Ice supply.....	2	1 40
606	Western Union Telegraph Co.....	Telegraph service.....	2	66
607	W. J. Carmichael.....	Speakers fee.....	5	20 00
608	Jos. H. Dodson.....	do.....	5	10 00
609	A. J. Glover.....	do.....	5	10 00
610	Theo. Goodrich.....	do.....	5	10 00
611	Prof. L. F. Graber.....	do.....	5	20 00
612	J. R. Holbert.....	do.....	5	10 00
613	C. C. Mills.....	do.....	5	10 00
614	Theo. Smith.....	do.....	5	20 00
615	Clayton C. Pickett.....	Expenses as director.....	6	16 96
616	W. C. Cochel.....	Expenses State meeting.....	6	25 21
617	Chas. Tarble.....	Expenses district conference.....	6	5 66
618	Mrs. A. J. Mollman.....	do.....	6	1 55
619	Mrs. B. G. Baltz.....	do.....	6	1 55
620	Robert Schleifer.....	do.....	6	4 14
621	Henry Hohlt.....	do.....	6	3 44
622	L. S. Dorsey.....	do.....	6	4 73
623	W. H. Koonce.....	do.....	6	5 66
624	Jay B. Wait.....	do.....	6	5 66
625	John Andres.....	do.....	6	3 21
626	Frank Troeckler.....	do.....	6	2 35
627	Henry Bardelmeier.....	do.....	6	3 09
628	L. F. Ochs.....	do.....	6	3 44

AUDITOR'S REPORT—Concluded.

Voucher No.	To whom.	For what.	Fund No.	Amount.
629	Frank J. Schlemer.....	Expense district conference.....	6	3 09
630	Mrs. James M. Vaughn.....	do.....	6	6 76
631	W. C. Heyl.....	do.....	6	3 62
632	Miss Ethel Sennott.....	do.....	6	2 87
633	Mrs. Wm. A. Hills.....	do.....	6	2 87
634	Leo. J. Kipping.....	do.....	6	3 01
635	Mrs. L. F. Ochs.....	do.....	6	3 44
636	Mrs. Geo. Eastburn.....	do.....	6	18 04
637	C. M. Filson.....	Expenses State meeting.....	6	25 02
638	Alfred Tate.....	Expenses district conference.....	6	2 87
639	Ethel Hinds.....	Expenses State meeting.....	6	25 91
640	Mrs. C. M. Filson.....	do.....	6	24 87
641	John E. Barrett.....	Expenses as director.....	6	83 46
642	H. E. Young.....	Secretary's expense.....	6	50 06
643	Lyle C. Bridgeford.....	Expenses Mercer Co. Inst.....	7	75 00
644	June Salaries.....	Office help.....	1	716 66
645	American Multigraph Co.....	Multigraph supplies.....	2	100 00
646	Wm. H. Conkling.....	Postage.....	2	300 00
647	Geo. W. Hudson.....	Rubber stamp.....	2	25
648	Illinois Bell Telephone Co.....	Telephone service.....	2	1 90
649	Springfield Clean Towel Service.....	Towel supply.....	2	1 20
650	Striffler Ice & Coal Co.....	Ice supply.....	2	1 40
651	Western Union Telegraph Co.....	Telegraph service.....	2	30
652	F. J. Blackburn.....	Speakers fee.....	5	10 00
653	J. G. Imboden.....	do.....	5	50 00
654	W. L. Burlison.....	Expenses State meeting.....	6	23 50
655	Mrs. D. J. Holterman.....	Expenses district conference.....	6	5 75
656	Mrs. H. A. McKeene.....	H. S. Secretary's expense.....	6	12 18
657	Mrs. P. J. Moore.....	Expenses district conference.....	6	5 63
658	C. C. Pickett.....	Expenses as director.....	6	16 52
659	I. B. Reed.....	do.....	6	17 79
660	Geo. A. Switzer.....	do.....	6	17 18
661	Eva M. Wilson.....	Expenses as H. S. Officer.....	6	45 46
662	H. E. Young.....	Secretary's expense.....	6	32 61
663	W. G. Curtiss.....	Expenses as director.....	6	45 46
664	M. E. Hoyt.....	Expenses Henry Co. Inst.....	7	75 00
664	J. J. Hornung.....	Expenses LaSalle Co. Inst.....	7	75 00
664	Marshal Boyle.....	Expenses Putnam Co. Inst.....	7	75 00
664	Frank Brown.....	Expenses Will Co. Inst.....	7	75 00
664	B. J. Kaufman.....	Expenses Woodford Co. Inst.....	7	75 00
664	Chester Smittkamp.....	Expenses Edgar Co. Inst.....	7	75 00

Your auditor would further report that he has checked the books of the secretary with the auditor's books and found them accurate and correct.

The following is a summary of all the financial transactions to June 30, 1922:

Fund 1.	Salaries—Appropriation available July 1, 1921.....	\$ 8,720 00
	Bills paid to June 30, 1922.....	\$ 8,599 92
	Balance June 30, 1922.....	120 08
		8,720 00
Fund 2.	Office Expenses—Appropriation available July 1, 1921.....	2,125 00
	Bills paid to June 30, 1922.....	\$ 2,072 65
	Balance June 30, 1922.....	52 35
		2,125 00
Fund 3.	Reporting—Appropriation available July 1, 1921.....	700 00
	Bills paid to June 30, 1922.....	\$ 683 90
	Balance June 30, 1922.....	16 10
		700 00
Fund 4.	Contingency—Equipment—Appropriations available July 1, 1921.....	850 00
	Bills paid to June 30, 1922.....	348 38
	Balance June 30, 1922.....	501 62
		850 00
Fund 5.	Speakers and Instructors—Appropriation available July 1, 1921.....	7,000 00
	Bills paid to June 30, 1922.....	\$ 6,692 50
	Balance June 30, 1922.....	307 50
		7,000 00
Fund 6.	General expense—Appropriation available July 1, 1921.....	8,000 00
	Bills paid to June 30, 1922.....	\$ 4,833 59
	Balance June 30, 1922.....	1,166 41
		8,000 00
Fund 7.	Co. Inst.—Appropriation available July 1, 1921.....	7,650 00
	Bills paid to June 30, 1922.....	\$ 6,505 18
	Balance June 30, 1922.....	1,144 82
		7,650 00
Total	appropriation available July 1, 1921.....	33,045 00
	Bills paid to June 30, 1922.....	\$29,736 12
	Balance June 30, 1922.....	3,308 88
		33,045 00

CLAYTON C. PICKETT, Auditor.

BY-LAWS

of the

ILLINOIS FARMERS' INSTITUTE

Together with the Rules for the

Management for County Farmers' Institutes: Act Making Appropriation for the Illinois Farmers' Institute and County Farmers' Institutes for 1921 and 1922; Act to Enable County Boards of Supervisors and County Commissioners to Appropriate County Funds for the Use of County Farmers' Institutes, and An Act Creating the Illinois Farmers' Institute.



BY-LAWS OF ILLINOIS FARMERS' INSTITUTE.

Whereas, by act of the Thirty-ninth General Assembly, approved June 24, 1895, the Illinois Farmers' Institute was created, empowering its Board of Directors to adopt by-laws for its government and management of its business in connection with the act creating it, it hereby adopts the following by-laws and hereby repeals all former by-laws heretofore adopted by the Board of Directors.

ARTICLE I—DIRECTORS.

SECTION 1. Eleven members of the Board of Directors shall constitute a quorum for the transaction of business, except as may be otherwise provided by these by-laws.

SEC. 2. The Board of Directors shall hold a meeting in the Institute rooms of the State House, on the second Tuesday after the annual meeting of the Illinois Farmers' Institute, the old board to dispose of its business, the new board to organize, elect officers and outline its policy for the ensuing year, and to transact such other business as may come before the board.

SEC. 3. Each director shall be the confidential advisor of the board and of the secretary of institute concerning institute affairs in his district; he shall report to the secretary at the close of the institutes in his district upon all matters that seem significant to his work, in order that the secretary may have a complete knowledge of the actual conditions in all parts of the State.

ARTICLE II—OFFICERS.

SECTION 1. The officers of the Board of Directors shall consist of a president, vice president, secretary, treasurer and an auditor, to be elected by ballot by the Board of Directors, for the term of one year, whose term of office shall begin July 1 after their election.

SEC. 2. All officers of the Board of Directors must be members of the board, except the treasurer and the secretary.

SEC. 3. The Board of Directors shall have power at any time to fill vacancies which may occur in its membership.

SEC. 4. The compensation of all officers and employees shall be fixed previous to their election or employment.

ARTICLE III—PRESIDENT AND VICE-PRESIDENT.

SECTION 1. The president shall be the chief executive officer of the Board of Directors; shall appoint all committees; shall be ex officio member of all standing committees; he shall preside over the meeting of the Illinois Farmers' Institute, the Board of Directors and the Executive Committee, and perform all duties incumbent on a presiding officer.

SEC. 2. In case of the absence or disability of the president, or in case of vacancy in that office, the vice-president shall fill the office.

SEC. 3. In case of the absence or disability of these officers, or in case both offices become vacant, any director or member of the Executive Committee who is called to the chair shall act as president for the time being.

ARTICLE IV—DUTIES OF THE SECRETARY.

SECTION 1. The secretary shall attend all meetings of the Board of Directors and standing committees, and shall keep a correct record of the

same. He shall perform such other duties as usually devolve upon such officer. He shall act as secretary of the annual meeting of the delegates and keep a record of same. He shall certify all bills for expenditures duly approved by the auditor, Executive Committee or Board of Directors, but shall not certify a bill on a fund unless there is sufficient money in the fund to pay such warrant.

SEC. 2. He shall have charge of all publications of the Institute and shall insert therein such matter as will advance the agricultural interests, and especially the work of the Illinois Farmers' Institute, under the direction of the Executive Committee. He shall arrange for and secure reports of State and other important institute meetings, making them a matter of record.

SEC. 3. The secretary shall be the custodian of all the records and papers belonging to, and all property owned by the Illinois Farmers' Institute, and shall report an inventory of all property of the Illinois Farmers' Institute to the Board of Directors at the close of each year; he shall make a detailed annual report in writing to the Board of Directors at the last meeting of the old board; he shall also make such other reports during the year as the Board of Directors or the Executive Committee may require.

SEC. 4. He shall organize a bureau of speakers, the same to include farmers, dairymen, horticulturists, livestock breeders, feeders and others who have adopted scientific and practical methods—secured beneficial results, and are able to tell about them, together with such instructors from the College of Agriculture and Experiment Station as may be assigned to the Institute work, and whose allotment of time shall be under his direction. These speakers shall be assigned work, as far as possible, in accordance with the wishes of the district director, officers of the Department of Household Science (where their interests may appear) and the county institute officers.

SEC. 5. The secretary of institutes shall attend the district conferences and aid in the arrangement of such circuits of institutes as will prove the most convenient for the attendance of speakers. He shall make a detailed annual report in writing to the Board of Directors, at its last meeting, of his acts and doings during the year, together with a general summary of the Institute work of the State for the year; he shall also make such other reports during the year as the Board of Directors or Executive Committee may require.

ARTICLE V—DUTIES OF TREASURER.

SECTION 1. The treasurer shall have charge of any funds received by the State Institute, keeping an accurate account of same. He shall pay out the same on warrants signed by the president and countersigned by the secretary, issued on approved bills. He shall arrange for supplying the funds necessary for State meeting expenses which must be paid pending the settlement of same through the State Treasurer.

ARTICLE VI—AUDITOR.

SECTION 1. All bills for expenditures ordered by the Board of Directors or the Executive Committee and all bills contracted in pursuance of any appropriation shall be referred to the auditor.

SEC. 2. The auditor shall carefully examine all bills, and, when approved shall return them to the secretary with recommendations that same shall be certified for payment. In case a bill is not approved, it shall be referred to the Executive Committee.

SEC. 3. The auditor shall carefully examine all reports from county farmers' institutes and the bills for expenses of the same, and if in compliance with the law providing appropriations for county farmers' institutes and the rules prescribed by the Board of Directors either approve the same, or if not approved, refer them to the Executive Committee.

SEC. 4. The auditor shall examine the books and records of the secretary and treasurer and make a detailed report of their financial transactions

up to July 1, of each year, to the Board of Directors and at other times when directed to do so by the Board of Directors or the Executive Committee, and shall report the accounts against which no warrants have been drawn, in the different funds, and the balances in the hands of the treasurer to the credit of each fund.

ARTICLE VII—STANDING COMMITTEES.

SECTION 1. There shall be created the following standing committees, the president appointing five members of each committee:

Executive Committee,
Legislative Committee,
Household Science Committee,
Committee on Agricultural Books,
Highway Committee,
Entomology Committee,
Committee on Soil Investigation and Experiments.

SEC. 2. The duties of standing committee, unless otherwise provided by these by-laws, shall be legislative in character; they shall meet at the same time and place that the Board of Directors' meetings are called, and at such other times as may be necessary, and shall make a written report to the Board of Directors at their annual meeting and at such other times as may be called for, said report to show progress made and future needs in their respective lines of work.

ARTICLE VIII—EXECUTIVE COMMITTEE.

SECTION 1. The Executive Committee shall conduct the affairs of the Illinois Farmers' Institute in the interval between the meetings of the Board of Directors in accordance with the rules and resolutions adopted by said board.

SEC. 2. It shall make all arrangements for holding the State Farmers' Institute meeting, assigning the time and place.

SEC. 3. It shall prepare a list of speakers for the use of county farmers' institutes.

SEC. 4. It shall pass on all bills referred to it by the auditor of the board.

SEC. 5. It shall be official advisor of the secretary of institutes when the Board of Directors is not in session.

SEC. 6. It shall meet on the call of the president of the Board of Directors.

ARTICLE IX—LEGISLATIVE COMMITTEE.

SECTION 1. The Legislative Committee shall prepare the bill or bills to be presented to the Legislature for enactment, and when the same have been approved by the Board of Directors or Executive Committee, shall take all necessary measures to have the same enacted.

ARTICLE X—HOUSEHOLD SCIENCE COMMITTEE.

SECTION 1. The Committee on Domestic Science shall counsel with the secretary of the Household Science Department and report upon measures for the advancement of the work of this department.

ARTICLE XI—AGRICULTURE BOOK COMMITTEE.

SECTION 1. The Agriculture Book Committee shall examine, and recommend, from time to time, such agricultural books as it may find to be true, scientific and applicable to Illinois conditions, and to recommend books for institute office library.

ARTICLE XII—HIGHWAY COMMITTEE.

SECTION 1. The Highway Committee shall co-operate with the Division of Highways, State Department of Public Works and Buildings, in its efforts to secure good roads and shall report from time to time such measures as may be recommended for the improvement of public highways.

ARTICLE XIII—ENTOMOLOGY.

SECTION 1. The Committee on Entomobogy shall be advisory to the State Entomologist in the planning experiments for the prevention of damage to crops by injurious insects, and make report to the Board of Directors of the progress of the work.

ARTICLE XIV—COMMITTEE ON SOIL INVESTIGATION AND EXPERIMENTS.

SECTION 1. The Committee on Soil Investigation and Experiments shall advise and co-operate with the director of the Agricultural Experiment Station in making chemical and physical examination of the various soils of the State, and in ascertaining by direct experiment in laboratory and field, the crops and treatment best suited to each; it shall visit the soil experiment fields and report to the board the result of the investigations and experiments.

ARTICLE XV—AMENDMENTS.

SECTION 1. These by-laws may be amended at any regular meeting of the Board of Directors by a majority of those present voting in the affirmative.

ARTICLE XVI—RULES.

SECTION 1. Robert's Rules of Order shall govern in all cases not otherwise provided for.

RULES FOR THE MANAGEMENT OF COUNTY FARMERS' INSTITUTES.

RULE 1. The director of each district consisting of more than one county shall, at the request of the Executive Committee, or the secretary of institutes, call a conference of delegates from the several counties of his district, at some convenient point, consisting of the following:

(a) One officer (or person selected by the officers) of each county farmers' institute.

(b) One officer (or person selected by the officers) of the department of household science of each county farmers' institute. (In counties in which the department is not organized, the officers of the county farmers' institute may appoint a delegate to represent the women of the county with the express understanding that said delegate shall, prior to the time for holding the county farmers' institute, make faithful effort to organize such department.)

(c) The county superintendent of schools for each county in the district.

The purpose of these conferences is to arrange the times and places for holding the next county institutes and to cooperate in securing speakers.

All necessary expenses of the three said delegates in attending the district conference shall be paid by the Illinois Farmers' Institute upon itemized bills approved by the director of the district.

NOTE 1. Rule 1 does not prohibit the attendance at the conference of more than three delegates. Indeed the number who may attend is unlimited; but the expenses of three only can be allowed from the State Institute funds.

NOTE 2. Delegates from independent institutes are invited to come to the conference at their own expense. Their requests for speakers, however, will receive the same attention by the secretary of institutes as those coming from the regular county organization. The purpose of the conferences

is to help everybody who will assist in the dissemination of agricultural information.

RULE 2. The director's approval shall be required in fixing the dates of the institutes in his district.

RULE 3. The secretary of each county institute shall submit the completed institute program to the district director for his approval before having it printed and distributed, and this shall be done at least twenty days prior to the time for holding the institute.

RULE 4. As soon as practicable after printing the programs, the secretary of each institute shall send two or more copies to each of the following:
The District Director.

Secretary, H. E. Young, Springfield, Illinois.

Each of the speakers whose names appear upon the program.

RULE 5. The date or place for holding an institute shall not be changed, from that determined upon at the district conference without the approval of the district director and the secretary of institutes.

RULE 6. No part of the State fund shall be expended for music, recitation, amusements of any kind, or for premiums.

RULE 7. No county farmers' institute meeting shall be held in connection with a street or county fair, a political meeting, a circus, or any similar attraction.

RULE 8. The publication and mailing of a copy of these rules to each county institute officer shall be deemed sufficient notice that vouchers for expenses prohibited herein will not be paid by the State.

RULE 9. Nothing in these rules shall be so construed as to prohibit a county farmers' institute from expending its own money as the officers may deem proper. The State fund must be expended in accordance with the rules here given.

RULE 10. In the case of removal from the county or refusal to act, on the part of any county institute officer, the director of the district shall appoint a suitable person to fill the vacancy, and this appointee shall serve until his successor shall have been elected at the next regular election.

ACT MAKING AN APPROPRIATION FOR THE ILLINOIS FARMERS' INSTITUTE AND COUNTY FARMERS' INSTITUTES FOR THE BIENNIUM BEGINNING JULY 1, 1921.

(Approved June 28, 1921, in force July 1, 1921.)

SECTION 1. *Be it enacted by the People of the State of Illinois, represented in the General Assembly:* That the following named sums, or so much thereof as may be necessary, respectively, for the purposes hereinafter named for the biennium beginning July 1, 1921, and until the expiration of the first fiscal quarter after the adjournment of the next General Assembly, be and are hereby appropriated to the boards, societies, associations and organizations following, to-wit:

SEC. 7. To the Illinois Farmers' Institute:

For salaries and wages:

Secretary	\$3,600	per annum
Stenographer	1,320	per annum
Clerk	1,800	per annum
Secretary, Department Household Science.....	2,000	per annum
Reporting proceedings	700	per annum

\$18,840.00

For office expenses

\$ 4,250.00

For equipment

750.00

For contingencies

200.00

For speakers and field work.....

14,000.00

For county institutes

15,300.00

For officers' expenses and State institutes.....

12,000.00

Total\$65,340.00

ACT TO ENABLE COUNTY BOARDS OF SUPERVISORS IN COUNTIES UNDER TOWNSHIP ORGANIZATION AND COUNTY COMMISSIONERS IN COUNTIES NOT UNDER TOWNSHIP ORGANIZATION, TO APPROPRIATE COUNTY FUNDS FOR USE OF COUNTY FARMERS' INSTITUTES.

(Approved June 5, 1911.)

SECTION 1. *Be it enacted by the People of the State of Illinois, represented in the General Assembly:* That it shall be lawful for county boards of supervisors in counties under township organization, and for county commissioners in counties not under township organization, to appropriate funds from the county treasury for use of county farmers' institutes in their efforts to promote the adoption of the latest approved methods of crop production, the improvement of livestock, the conservation of soil fertility, and the improvement of agricultural conditions generally: *Provided*, that in no case shall it be lawful for a county board to appropriate more than three hundred dollars (\$300) in any one year for the above purposes.

AN ACT CREATING THE ILLINOIS FARMERS INSTITUTE.

Approved June 24, 1895. Amended and approved May 11, 1901. Amended and approved May 15, 1903. Amended and approved June 10, 1909. Amended and approved June 28, 1919.

SECTION 1. *Be it enacted by the People of the State of Illinois, represented in the General Assembly:* That to assist and encourage useful education among the farmers, and for developing the agricultural resources of the State, that an organization under the name and style of "Illinois Farmers' Institute" is hereby created, and declared a public corporation of the State.

SEC. 2. It shall consist of three delegates from each county of the State, elected annually at the farmers' institutes for said county by the members thereof.

SEC. 3. The affairs of the Illinois Farmers' Institute shall be managed by a Board of Directors, consisting of:

1. State Superintendent of Public Instruction.
2. Dean of Agriculture, University of Illinois.
3. Director of State Department of Agriculture.
4. President of the State Horticultural Society.
5. President of the State Dairymen's Association, and one member

from each congressional district of the State, to be selected by the delegates from the district present at the annual meeting of this organization: *Provided*, that the members first selected from the congressional districts of even numbers shall serve for one year, and the members first selected from the congressional districts of odd numbers shall serve for two years, and that the members selected thereafter to fill the expired term of office shall serve for the period of two years.

SEC. 4. The Board of Directors of the Illinois Farmers' Institute shall have sole care and disposal of all sums that may be appropriated by the State to sustain the organization, and shall expend the same in such manner as in their judgment will best promote the interests in useful education among the farmers and develop the agricultural resources of the State. The Illinois Farmers' Institute shall make annual report to the Governor of its transactions, which report shall include papers pertaining to its work and addresses made at the annual meeting of the organization, and a classified statement of all money received and of all expenditures made, and fifty thousand (50,000) copies of such report shall be printed and bound in cloth on or before September 1, of each fiscal year, three-fourths for the use of the Illinois Farmers' Institute, and the remainder to the Secretary of State for distribution. It shall make no appropriation without funds in hand to meet the same, and the State of Illinois shall in no event be held liable or responsible for debt, obligation or contract made by the Illinois Farmers' Institute or its Board of Directors.

SEC. 5. There shall be held annually, under the direction of the Board of Directors, between October 1 and March 1, following of each year, a public meeting of the delegates from county farmers' institutes and of farmers of this State at such time and place as may be determined by the Board of Directors, of not less than three (3) days' duration, which meeting shall be held for the purpose of developing the greater interest in the cultivation of crops, in the care and breeding of domestic animals, in dairy husbandry, in horticulture, in farm drainage, in improved highways and general farm management through and by means of liberal discussions of these and kindred subjects and any citizen may take part in these meetings, but only duly elected and accredited delegates from county farmers' institutes shall be permitted to vote in the election of the Board of Directors.

SEC. 6. The members of each new Board of Directors shall enter upon their duties the second Tuesday after their election, and hold their offices for one or two years, as provided in section 3, or until their successors are elected and enter upon their duties. The Board of Directors shall have power to fill vacancies in the board. It shall organize by the election of a president, vice-president, treasurer and secretary, who shall hold their offices for one year, from the date of their election, or until their successors are elected and qualified. It shall employ such superintendents, speakers and clerks as may be deemed proper for organizing and conducting the work of the Illinois Farmers' Institute, and provide for their compensation by the rules of the Board of Directors. The secretary and treasurer may be other than members of the Board of Directors.

SEC. 7. Rooms in the Capitol building, shall be assigned to the officers of this organization by the proper authority, which shall then be under the control of the Board of Directors.

SEC. 8. The Board of Directors may make and enforce such rules and by-laws, not in conflict with the laws of this State, as will render its work most useful and efficient.

SEC. 9. For the purposes mentioned in the preceding sections, said Board of Directors may use such sums as it may deem proper and necessary, not exceeding the amount appropriated therefor by the General Assembly from the general fund, for that purpose: *Provided, further, that the*

1. State Superintendent of Public Instruction,
2. Dean of Agriculture, University of Illinois,
3. Director of State Department of Agriculture,
4. President of the State Horticultural Society,
5. President of the State Dairymen's Association,

And the present congressional representatives of the Illinois Farmers' Institute Association shall constitute the first Board of Directors of this organization, who shall have charge of the affairs of the same until their successors have been duly elected, and enter upon their duties as provided in this act.

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